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THE MOUNTAIN IRON DIFFUSION PROGRAM: PHASE 1 SOUTH VANDENBERG: VOLUME 1

W. T. HINDS AND P. W. NICKOLA

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THE MOUNTAIN IRON DIFFUSION PROGRAM: PHASE I SOUTH VANDENBERG: VOLUME I

By

W. T. Hinds and P. W. Nickola

Atmospheric Sciences Section
Environmental and Radiological Sciences Department

November 1967

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THE MOUNTAIN IRON DIFFUSION PROGRAM: PHASE I

W. T. Hinds and P. W. Nickola

ABSTRACT

Field diffusion experiments were conducted at Vandenberg Air Force Base, California, during 1965 and 1966. This program, nicknamed "Mountain Iron," was undertaken to establish quantitative diffusion predictions for use as range safety tools in the "South Vandenberg" ballistic and space vehicle operations. The only pollutant source character studied was toxic propellant materials released continuously from ground level pools.

Volume I of this report contains the operational applications and limitations of the equations and other results obtained. Volume II includes a description of the conduct of diffusion experiments, discussion of results, summaries of experimental data, and an analysis of the collected data, including development of the various diffusion equations, preliminary climatology, and a discussion of applicability limitations and recommendations for further studies. A third item of the report is a compilation of experimental data obtained. These data, generally described in Volume II, are too voluminous to be distributed to all recipients of Volumes I and II. However, the data are archived at the Environmental Technical Applications Center (ETAC), 1210th Wea Sq, Bldg. 159 Navy Yard Annex, Washington, D.C. 20370, from which authorized agencies may obtain the data through accepted channels of request.

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PREFACE

The prime considerations of Volume I are:

- Compliance with the Clean Air Act, Public Law 88-206, December, 1963
- Compliance with AFR 161-22, Environmental Pollution control, as supplemented
- Protection of life and property through adequate range safety procedures.

The details and basic data pertinent to the final equation formulation will be found in Volume II; the descriptions, statements of applicability, usage and limitations of results are discussed in this volume.

THE MOUNTAIN IRON DIFFUSION PROGRAM: PHASE I

W. T. Hinds and P. W. Nickola

INTRODUCTION

The objective of Project Mountain Iron - Phase I South Vandenberg was to develop a system for describing the potential of the atmosphere for diffusing and diluting pollutants employed as propellants in launch preparation and operations for the South Vandenberg area.

Mesoscale atmospheric diffusion parameters are introduced into range safety considerations through a computer controlled data acquisition and display system. Diffusion equations are either applied by computer program to predict final extent of the existing potential toxic hazard area, or by forecaster manipulation through tables or computer program.

Preliminary thought on the subject indicated that diffusion equations valid for one area of the range would not be valid for another (as this chapter will indicate) because of terrain and weather regime differences.

Present instrumentation for the collection of measurable parameters was proven to be adequate for insertion into the diffusion equations for prediction of potential or actual toxic hazard areas at the 95% confidence level as a minimum.

CHAPTER 1.
SOUTH VANDENBERG EQUATIONS

The equations* presented here are in the forms utilized in tables and computer programs related to the AFWTR meso-meteorological data processing system with application to prediction of atmospheric diffusivity. A discussion of the limitations on the use of the equations is included to assure judicious use of the equations and predictions.

DERIVATION OF THE EQUATIONS

Two parallel approaches were pursued during the analysis of the Mountain Iron data: one was based upon physical reasoning and using time as the downwind variable; the other was a purely statistical approach with distance as the downwind variable. The difference between the two equations is minimal, but the statistical approach yielded slightly more accurate predictions and substantially si[illegible]er data manipulations.

RECOMMENDED AND ALTERNATE EQUATIONS

In the development of the statistical model, two equations of almost identical format were finally chosen to provide the best available predictions. The recommended equation uses the temperature difference between 6 and 300 feet; the deeper layer parameter produces a slightly improved reliability of prediction within a factor of 2 when compared to the results from a 6 to 54 foot temperature difference.

At the 95% level, the distance to a given concentration is

$$X = 790(\chi/Q)^{-0.54}\ \sigma_\theta^{-0.192}\ \bar{u}^{-0.470}\ (\Delta T_6^{300} + 10.8)^{0.616} \qquad (1)$$

This equation refers to average concentration of NO_2 only, in parts per million The release rate, which was used to normalize the concentration, is units of pounds per minute.

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* A detailed discussion of the derivation of prediction equations is given in Chapter 6, Volume II.

Because 6 to 300 foot temperature differences are available at very few sites on South Vandenberg, an alternate equation, developed for 6 to 54 foot temperature difference, is used here to form an equation for operational use in the same manner as the recommended equation. At the 95% level, the distance equation is

$$X = 608\left(\frac{\chi}{Q}\right)^{-0.55} \sigma_\theta^{-0.229} \bar{u}^{-0.566} (\Delta T_6^{54} + 9)^{0.852} \quad . \tag{2}$$

Although this alternate equation differs slightly from the recommended equation, it still refers to parts per million of NO_2 only, and is normalized to a release rate in terms of pounds per minute.

EQUATIONS FOR AN ARBITRARY CONTAMINANT

If trouble from some other gas is expected, the equations must be corrected to allow for variation in molecular weight. If M is the molecular weight of the gas of concern, then the 95% confidence level equation in terms of distance to a concentration is

$$X = 5000\left(\frac{\chi M}{Q}\right)^{-0.55} \sigma_\theta^{-0.229} \bar{u}^{-0.566} (\Delta T_6^{54} + 9)^{0.852} \quad . \tag{3}$$

If the contaminant is a particulate rather than a gas, specification of parts per million loses its significance; that is, the mass of the contaminant per cubic meter is the pertinent measure. At the 95% confidence level, with χ in grams per cubic meter and Q in pounds per minute, the distance to a concentration is

$$X = 19.8\left(\frac{\chi}{Q}\right)^{-0.55} \sigma_\theta^{-0.229} \bar{u}^{-0.566} (\Delta T_6^{54} + 9)^{0.852} \quad . \tag{4}$$

TABLES AND COMPUTER PROGRAMS FOR TOXIC HAZARD AREA COMPUTATION

Since there is no provision for machine display of a forecast planform of a potential or actual toxic hazard area, some means of rapid computation

must be made available to the responsible agency. Equation (6) page 8, Chapter 2, forms the basis for computer prepared tables for South Vandenberg. These tables enable the finding of X when any values of $\bar{u}$, A, σ_θ and ΔT are given.

The computer program, utilized in the mesoscale, real time, meteorological parameter sampling system, presents displays of $\bar{u}$, σ_θ, ΔT and wind direction together with X for various A values for current, potential, toxic hazard area description

CHAPTER 2
OPERATIONAL EQUATIONS

COMPARISON OF NORTH AND SOUTH VANDENBERG EQUATIONS

The equations presented in Chapter 1 have been manipulated into other forms from which tables* and computer programs have been prepared.

All equations in this chapter are based upon a ground pool of N_2O_4 (or NO_2) that provides a continuous point source of pollutant. The equations will provide at least 95% confidence that the actual or potential toxic hazard areas defined by the equations will contain all concentrations of pollutants equal to or in excess of 25 ppm.

The South Vandenberg Diffusion Equation is a manipulation of Equation (2) which becomes

$$X = 103\ P\ \sigma_\theta^{-0.229}\ (\Delta T_6^{54} + 9)^{0.852} \tag{5}$$

where X is distance in feet from source to where the concentration of pollutant becomes less than 25 ppm.

σ_θ is the standard deviation of wind direction in degrees at the source.

ΔT_6^{54} is the temperature difference in degrees Fahrenheit between the heights of 6 and 54 feet above ground level.

P is a modified release rate, calculated from

$$P = 0.162\ \bar{u}^{-0.126}\ A^{0.550} \tag{5a}$$

where $\bar{u}$ is the average wind speed in knots at 12 feet above ground level

---

* Tables for finding $P = f(\bar{u}, A)$ and $X = f(P, \sigma_\theta, T)$ were prepared for use on South Vandenberg AFB.

and A is the area in square feet of the ground level pool of pollutant. Thus, combining Equations (5) and (5a),

$$X = 16.686\,\bar{u}^{-0.126}\,A^{0.550}\,\sigma_\theta^{-0.229}\,(\Delta T_6^{54} + 9)^{0.852} \quad . \tag{6}$$

The North Vandenberg Diffusion Equation is the result of the Dry Gulch portion of The Ocean Breeze and Dry Gulch Diffusion Programs.[1] This equation from which tables* and computer programs were prepared is

$$X = 9.32(1.71)\left(\frac{25\ \text{ppm}}{Q}\right)^{-0.509}\,\sigma_\theta^{-0.258}\,(\Delta T_6^{54} + 10)^{2.21} \tag{7}$$

where Q is the release rate in pounds per minute calculated from

$$Q = 0.0242\,\bar{u}^{0.8}\,A$$

with $\bar{u}$ the average wind speed in feet per second at 12 feet above ground level and other terms are as for Equation (6). Through algebraic manipulation and conversion of $\bar{u}$ to knots,

$$X = 0.601\,\bar{u}^{0.4072}\,A^{0.509}\,\sigma_\theta^{-0.258}\,(\Delta T_6^{54} + 10)^{2.21} \quad . \tag{8}$$

A comparison of Equations (6) and (8) reveals that similar measurable meteorological parameters are involved in the South Vandenberg and North Vandenberg diffusion equations. Less apparent are the effects of these parameters on X. Since the equations are, in essence, empirically derived from prior studies and theory by statistical-fit, some variance is found in the value assigned to coefficients and exponents when the North and South Vandenberg equations are compared.

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* Tables for finding $Q = f(\bar{u}, A)$ and $X = f(Q, \sigma_\theta, \Delta T)$ were prepared in a previous study for use on North Vandenberg AFB.

The North Vandenberg equation shows a systematic error when applied to South Vandenberg data (Figure 1). On the average, the equation overpredicts by about a factor of 2 but underpredicts 26% of the cases examined. The relative scatter increases as exposures decrease (at greater distances). Because of limitations in sampling grids, comparisons are taken out only to 8 kilometers.

Generally, the predictions from the North Vandenberg equation are rather good. The major drawback to its use is the too rapid decrease of exposure with distance, which would lead to underprediction if pressed beyond several kilometers. Wind speed was found not to be an influential parameter in the North Vandenberg equation, which is also too sensitive to temperature stratification to be accurate over South Vandenberg.

<u>Sensitivity of Equations to Parameters</u>

Comparing Equations (6) and (8), term by term, for $\overline{u}$:

North $X = f(\overline{u})$

South $X = f(1/\overline{u})$

This reflects the greater turbulent flow and mixing over South Vandenberg due to the rougher terrain. Given the same $\overline{u} = 10$ kts:

North $\overline{u}^{0.4072} = 2.554$

South $\overline{u}^{-0.126} = 0.7482$

The $\overline{u}$ effect for South Vandenberg is much more pronounced (at least by a factor of three) than for North Vandenberg. For A:

North $X = f(A)$

South $X = f(A)$

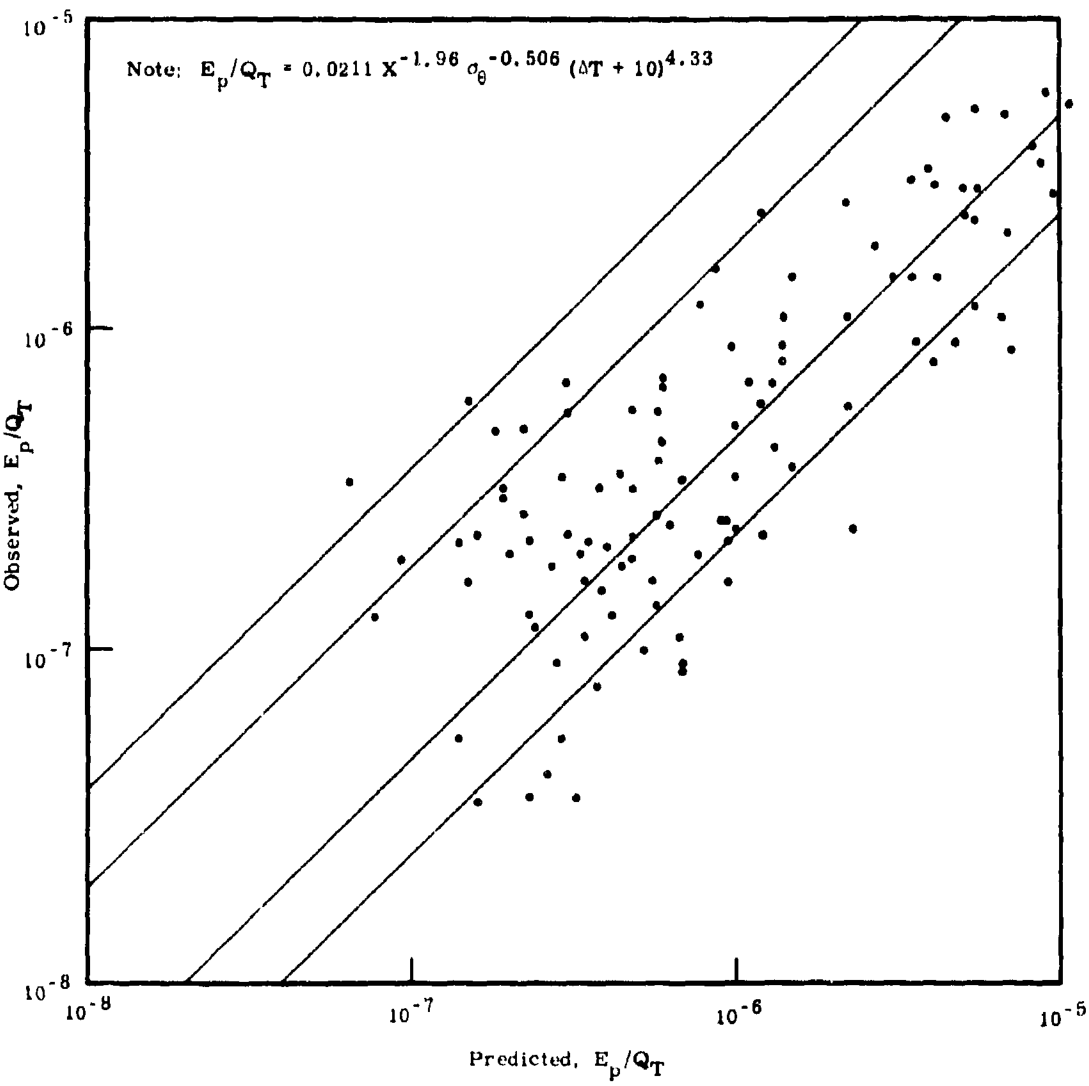

FIGURE 1. Mountain Iron Data Versus Predictions from Weather Information Network and Display (WIND)

Given the same A = 10,000 square feet:

North $A^{0.509} = 108.65$

South $A^{0.550} = 105.20$

For ΔT_6^{54}:

North $X = f(\Delta T_6^{54})$

South $X = f(\Delta T_6^{54})$

Given the same $\Delta T_6^{54} = 1.0$ °F:

North $(\Delta T_6^{54} + 10)^{2.21} = 169.9$

South $(\Delta T_6^{54} + 9)^{0.852} = 7.1$

For σ_θ:

North $X = f(\frac{1}{\sigma_\theta})$

South $X = f(\frac{1}{\sigma_\theta})$

Given the same $\sigma_\theta = 13$ °F:

North $\sigma_\theta^{-0.258} = 1.938$

South $\sigma_\theta^{-0.229} = 1.799$

Substituting these values in Equations (1) and (3):

		$\bar{u}$	A	σ_θ	T
North	X = 0.601	(2.554)	(108.65)	(1.938)	(169.9) - 54,900 feet
South	X = 16.86	(0.7582)	(105.20)	(1.799)	(7.1) = 17,200 feet

LIMITATIONS ON THE USE OF THE SOUTH VANDENBERG EQUATION(S)

Results from any empirical study are limited in their usefulness, and the statistical-fit equations developed from the Mountain Iron data are no exceptions. To offer some guidance in the judicious use of the equations, the limits imposed by test conditions are briefly examined here.

Source Location Limitations

The equation specifically applies to the VIP-1 area. However, it should be applicable to source points resembling the Source A area: near the ocean, with unobstructed upwind fetch, and with a fairly rough downwind region over which diffusion takes place (which assures a level of mixing more or less comparable to that observed from Source A). These restrictions mean that the equation must not be expected to apply to diffusion from a source in Honda Canyon, for example, or in the Santa Ynez Valley, especially in westerly winds. Likewise, a source in the Sudden Ranch area can not be reliably simulated from the Phase I Mountain Iron equation. Source points that are reasonable extrapolations from the Source A area lie between Pale I, Pale II, Pad A and Pad D--a fairly generous portion of the South Vandenberg. Probably, any departure from the immediate area of Source A will result in degrading the accuracy and reliability of the predictions. However, in this respect, comparisons of the Source B tests with predictions from the Source A equation and tower 300 data are encouraging. The Source B tests show that exposures from this release point can be expected to be comparable to those from Source A over moderate distances.

Source Type Restrictions

Most of the Mountain Iron tests were of 15 or 30 minute duration, with a constant and continuous release rate, while 9 tests were only five minutes. Since no discernible difference exists between 15 and 30 minute tests, these were treated in the analysis as a homogeneous group. The 5 minute tests presented a slightly different result: they indicated a more rapid decrease

in exposure with distance than the other tests in agreement with theoretical predic ons and, for that reason, are not strictly within the domain of the equations recommended for use.

The most severe restriction on source type is the height of release, with only ground level releases being pertinent. If any substantial elevation from ground level is postulated, the Mountain Iron results are not applicable. Thus, bouyant plumes--as from a conflagration--are among the excluded types of sources; so are simple elevated sources. Some use of the equation can be made as a limit, which slightly elevated sources will soon approach, but there is little possibility of accurately predicting the position or magnitude of the maximum exposure from any elevated source. It seems probable that the equation will not serve even as a limiting case if the source is high (such as a couple hundred feet), or if the elevated release is into a stable atmosphere. Only a substantially modified testing program will yield results pertaining to bouyant or elevated sources. As in the case with the North Vandenberg WIND equation, the South Vandenberg equation applies most accurately to a cold spill situation, especially one with a limited horizontal extent since the tests were conducted with essentially point sources.

Puffs, even if not bouyant, are not correctly handled by the recommended equation because of the great difference in the mechanism governing diffusion of puffs and plumes (the 5-minute tests approach puffs in behavior). In particular, puffs during a portion of their history diffuse faster than plumes, leading to somewhat lower exposures for a given release rate. Without data, no guidance is possible other than theoretical developments beyond the scope of this report.

Distance Limits

All Mountain Iron tests were confined to distances less than about 10 miles, with only a very few tests successful in providing data at that distance. The majority of the tests terminated at 5 miles or so, since the sampling was restricted to the South Vandenberg area.

For this reason, confident use of the equations must be restricted to perhaps 10 or 11 miles. The systematic error pointed out in the statistical fit portion of Chapter 6, Volume II means that extreme caution is required even at that distance because underprediction is almost assured during daytime conditions beyond some 8 or 9 miles. There is no help for this unless a quite artificial correction is applied to daytime tests to reduce the error, and such a practice is not recommended. More work would be required, and substantially different testing programs carried out, to provide a real basis for prediction of exposures at distances exceeding 10 miles.

DISCUSSION OF PLUME GEOGRAPHY

Plume Width with Regard to Atmospheric Stability

An analysis of Sutton's[2] diffusion equations for a continuous point source indicates that the area enclosed by an isopleth drawn through concentrations of equal value will be "cigar shaped," with the major axis along the direction of the mean wind and the maximum cross-wind dimension of the isopleth occuring about half way between the source and the end of the plume. Using Sutton's theoretical works, it has been demonstrated and confirmed by experimental data that over level terrain, the width of the plume for unstable conditions is one-third the length; for neutral conditions one-fifth the length; and one-eighth the length for stable conditions. The angular width of the plume is a direct function of time and wind direction variability.[1] Modification of these results by flow over mountainous regions is easily seen in the plume patterns of Appendix A.

Effect of Terrain

In general, the plumes observed over South Vandenberg can be said to fall into one of three types:

- A modified cigar
- A canyon low
- A multiple maximum type.

The modified cigar type is only slightly different than the ordinary plume from sources over flat terrain; they may be characterized by bending or turning, but represent a monotonic decline of exposure with distance. The canyon low type results from flow over two ridges with a deep, steep canyon between. The exposures found in the canyon are significantly lower than on either ridge. The multiple maximum type is really an elaborate canyon low type, resulting from flow over two, three, or even more ridges and valleys. As might be expected from a look at the terrain of South Vandenberg, the field samples were strongly biased toward the canyon low type, and probably the canyon low type can be expected to occur most of the time with northwest flow (the prevailing wind direction) from a source near the north side of South Vandenberg. Figure 2 shows, dramatically, the clear-cut character observed during an actual test.

OPERATIONAL USE OF AIRCRAFT SAMPLING

The Battelle-Northwest tracer sampling aircraft was operated successfully during 23 of the field tests of the Mountain Iron Diffusion Program. The guides and techniques suggested are from data collected by the aircraft, and detailed discussion of aircraft sampling is included in Appendix B, Volume II.

The reader is reminded that, although the aircraft sampling was obviously done aloft, the tracer source in all field tests was within a few meters of the surface.

Vertical Extent of a Tracer Released Near the Surface

Measurements of concentration made by an aircraft of a tracer released from a point near the surface revealed the following:

- Where only superadiabatic and/or adiabatic conditions existed, the tracer was found at relatively high elevations and at relatively low concentrations. Under these conditions, tracer was found as high as 900 feet above the surface at distances less than 2 kilometers from the source; 2000 feet at 4 kilometers; and 2600 feet at 18 kilometers.

FIGURE 2. Canyon Low Type of Plume (MI Test Number 48)

- Where thermal stratifications between isothermal and adiabatic existed, the tracer was frequently found well within or at the top of these relatively stable layers, but heights were not as great as mentioned above.
- Where a temperature inversion existed, tracer penetration into the inversion layer was minimal.

Horizontal Extent of Aloft Tracer with Respect to Ground Plume

The measured or predicted ground level plume centerline can be used as a basis for specifying the expected location of the aloft portion of the plume. The first step in this procedure is to consider the aloft plume at a chosen distance (irrespective of altitude) as being projected to the surface. Figure 3 then specifies the distance from the ground plume centerline where the projection will fall 50 and 83% of the time. For instance, the ground projection of the aloft plume at 8 kilometers can be expected to be found within about 1.2 kilometers of the ground plume centerline 50% of the time, and within 2.4 kilometers, 83% of the time.

The relationship is based on field measurements to distances of 10 kilometers from the source. Beyond that, the plume centerline was not defined. Thus, the dotted portion of the curves beyond 10 kilometers from the source are extrapolations.

An alternate method of estimating the location of the aloft plume is available if the lateral extent of the ground plume is known or is predictable. Approximately 90% of the intercepts of the aircraft with the tracer were demonstrated to have occurred directly above the area swept by the ground level plume.

Comparison of Peak Aloft Concentration to Ground Concentrations

A parameter of interest is the highest concentration that can be expected in the zone above a ground level plume. If one knows or can reasonably forecast ground level plume centerline mean concentrations, then an estimate of the peak instantaneous concentration can be made

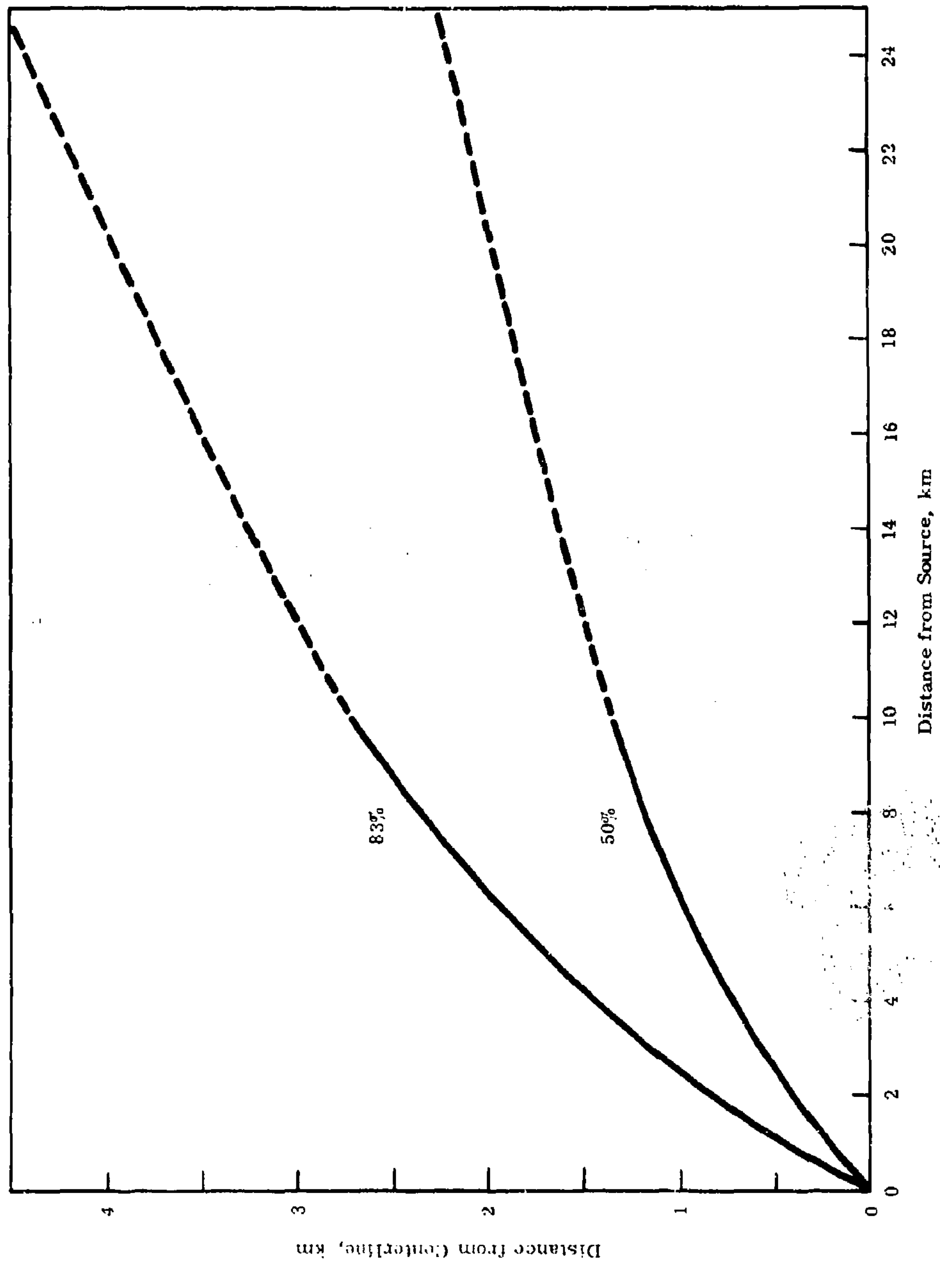

FIGURE 3. Distance from Ground Plume Centerline Within Which the Indicated Percentage of the Aloft Plume Can Be Found

for the aloft plume. The relationship is based on exposure data from filters exposed at the 1.5 meter elevation, and on concentration measurements made at a variety of elevations by the aircraft.

A good estimate for this relationship is

$$\chi_{ip}/\overline{\chi}_p = 2.0\, X^{1.2} \tag{9}$$

where χ_{ip} is the near instantaneous aloft peak concentration at distance X, $\overline{\chi}_p$ is the mean ground level centerline concentration at X, and X is the distance from the source in kilometers.

Figure 4 plots the ratio $\chi_{ip}/\overline{\chi}_p$ for distances out to about 26 kilometers--the maximum distance to which data were obtained. The dotted lines suggest the envelope of $\chi_{ip}/\overline{\chi}_p$ values observed from all field tests where such computations were possible. Their magnitudes are approximately 1/5 and 5 times the "typical" values shown by the solid curve.

No instantaneous measurements of tracer concentration were made at the ground level, so ratios of instantaneous ground level peak concentrations to $\overline{\chi}_{ip}$ cannot be directly investigated. However, beyond distances of about 5 kilometers, it is unlikely that the ratio of ground level instantaneous peak-to-mean centerline concentration will exceed the ratio whose equation is given above.

SECONDARY INVESTIGATIONS

In conjunction with the work leading to the prediction equation--the object of this study--several subsidiary facets of diffusion over South Vandenberg were studied. Although generally brief and not at all definitive, these studies were certainly of interest in the conclusions that were possible. The topics included are:

- Short-term releases
- Trajectory analysis of some of the tests
- Ways of constructing trajectories.

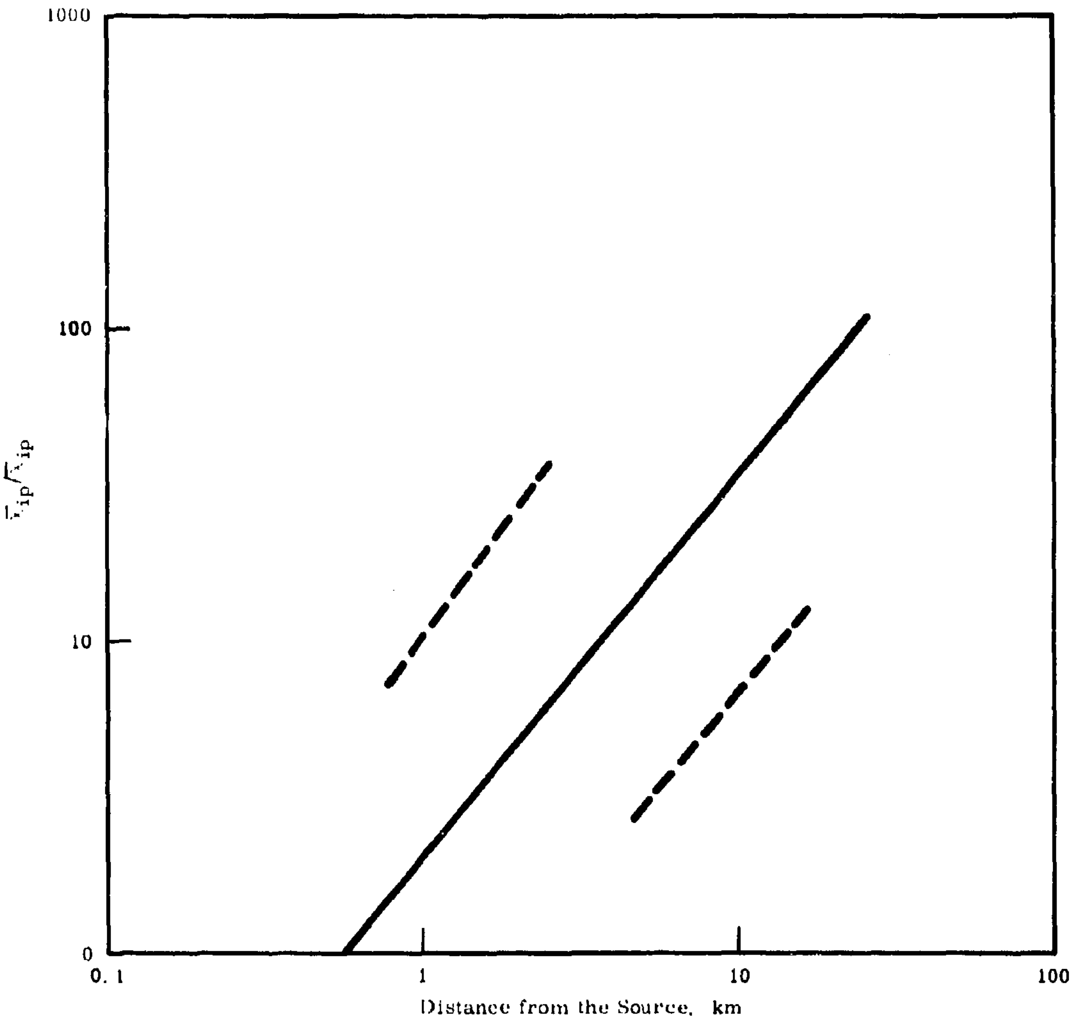

FIGURE 4. $\chi_{ip}/\overline{\chi}_p$ Versus Distance from Source

The initial effort made here on trajectory studies indicates that investigation of transport on a mesoscale could be particularly promising for future work.

Short Term Releases

During the Mountain Iron testing series, a few tests were conducted with release times considerably shorter than the standard. Although such tests were not required to provide the final equation sought, additional confidence in the use of the equation seemed possible if such data were available. In all, 9 five minute tests were made from Source A, with two being night tests. The exposure data from the 5-minute tests formed a very homogeneous set, with relatively little scatter. Comparison with data from 30-minute tests showed that the 5-minute tests resulted in the same level of exposure at moderate distances, 1 to 3 miles (Figure 5). The striking difference lies in the dependence on X of the 5-minute tests: whereas, the 30-minute tests decrease with the -1.8 power of distance, the 5-minute tests decrease with the -2.2 power of distance. This is in accordance with theory, at least in principle, if not in magnitude. The 30-minute tests are little affected by longitudinal diffusion, but the 5-minute tests must be significantly affected, since the longitudinal dimension of the short tests is usually comparable with the horizontal dimension.

Trajectory Studies

Several techniques for estimating the trajectory of the material released during Mountain Iron tests were investigated to determine as accurately as possible the relative usefulness of each.

- The simplest approach involved the use of wind direction from a single WIND sensor to predict the trajectory.
- A more complex method was the use of 100-foot winds wherever available and 54-foot-or surface winds at other sites.
- Another method entailed the use of 5-minute averages of surface winds at all possible sites to construct a rather detailed trajectory prediction.

These methods will be discussed individually to provide a basis for operational trajectory predictions.

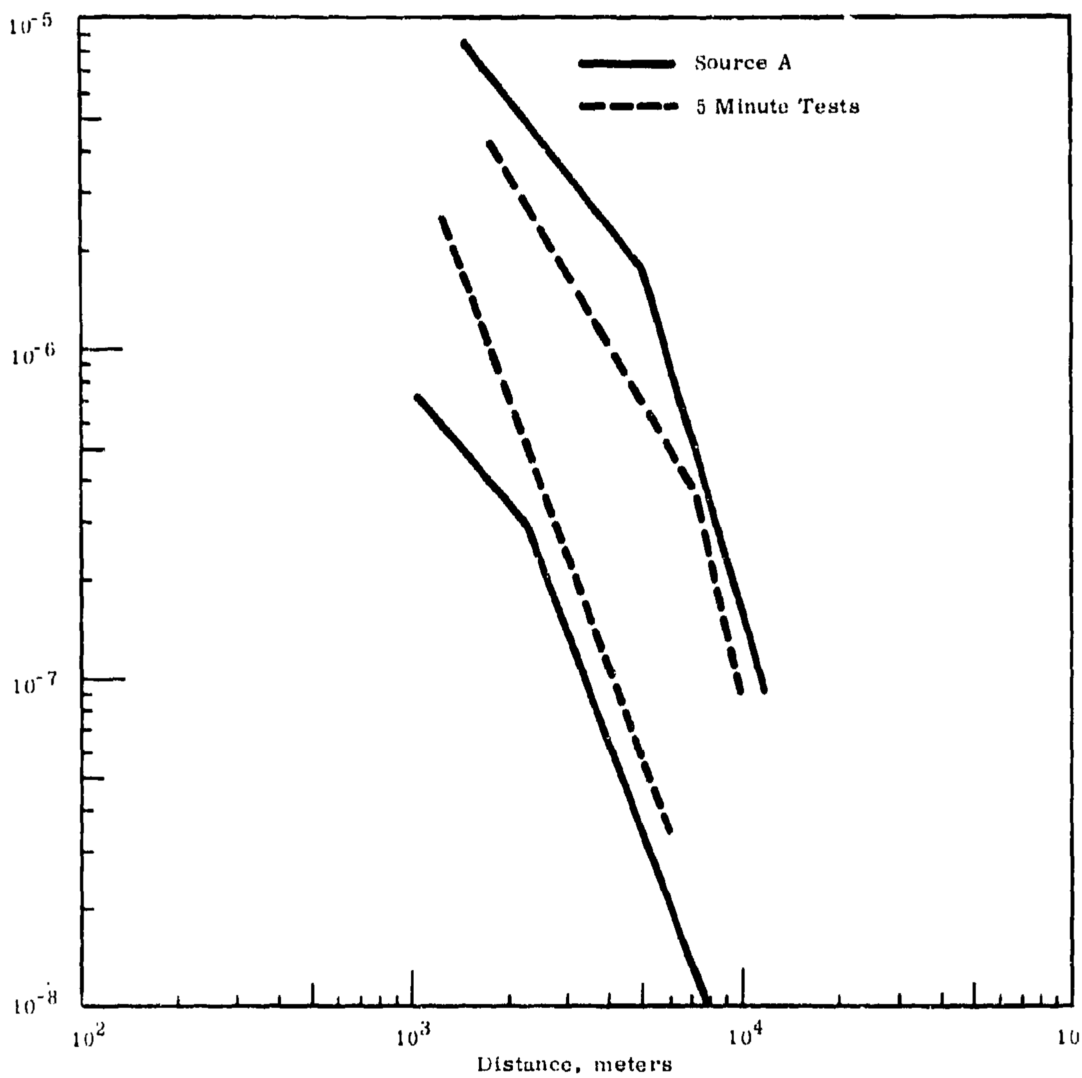

FIGURE 5. Comparison of 30-Minute and 5-Minute Release Times

Trajectories from 30-Minute Average Winds

The possibility of using rather long-term averages of wind direction and speed to estimate plume travel was investigated by using 30-minute average data from the operational WIND sites. Only a few tests were conducted during the brief interval when the entire WIND system was up, prior to the complete shutdown involved in the installation of the new computer during June and July. The tests were MI-67, and 69 through 96, of which 14 tests were from Source A and 5 from Source B.

The simplest approach to trajectory forecast is to choose a single wind sensor to indicate the wind field carrying the plume. To determine the success of various choices of wind sensors, the difference in direction between the forecast plume direction and the actual direction was calculated (in degrees azimuth) for all the tests listed above, along with the standard deviation of error (Table I). Since the one-sigma limit is tabled for each site, the trajectory forecast from a particular site fell within the listed limits of error 68% of the time.

TABLE I. Plume Centerline Location Error Using Selected Single Wind Observations

Site	Height of Wind Observation, ft	Degrees Error (in 68% of cases)
Source	Surface	±10
300	300 - 100	±15
300	54	±19
300	Surface	±23
100	100	±6
100	Surface	±17
10	Surface	±28
11	Surface	±84

From the Table, if only a single site is to be used, it is clear that Site 100 provides the best prediction of plume travel. Thus, for a release at the VIP-1 Pad, a centerline drawn according to Site 100

wind direction would be less than 6 degrees in error 68% of the time. A similar degree of success is plausible for releases from nearby points (such as Pale II), especially since a quarter of the data involved in deriving Table I were from Source B releases, rather distant for the VIP-1 pad.

Nevertheless, the use of a single point for estimating trajectories is to be discouraged, especially in such terrain as found at South Vandenberg, since the probability of strong deviations in direction with increasing distance is high. The 30 minute average wind conditions from all the WIND system sensors, using 100-foot winds where available, provided a much more detailed basis on which to work. To construct the 30-minute trajectories, the wind field, indicated by the 30-minute average winds, was drawn, and the path of a parcel starting from the source point was drawn according to the field. The next 30 minute average field was drawn, the path of the parcel for the second 30 minute interval deduced, and drawn onto the first 30 minute map. This path was then compared with the observed plume.

Two variations were investigated at this time. The 100 foot wind field was drawn both with and without the information received from the source point wind sensor, which is not a WIND site for the Source A releases. Likewise, the wind fields as indicated by the surface winds were drawn with and without the source point wind. The results are shown in Table II; although the lack of a source point wind is a serious handicap, it is interesting to note that the relative success of this detailed procedure is no better than that of the single-wind process. For example, at 2 miles, the best estimate is from the 100-foot winds, but the one-sigma error is still 6 degrees.

The surface winds have a larger error, 8 degrees, which seems to indicate that 100 feet is a better estimate of the transport height of the bulk of the plume. There are no definitive data on this point, so it must be conjectural. It was shown earlier (in the section on aircraft sampling) that the plume regularly was sampled at hundreds of feet above the

TABLE II. Trajectory Errors in Tests MI-67 and MI-69 to -86 Using Selected Wind Data

Wind Data	Degrees Error 68% of Cases 1.8 mi	3.6 mi
100 ft height with source wind	±6	±4
100 ft height without source wind	±12	±10
Surface winds	±8	±13
Surface winds without source wind	+21	±21

terrain; therefore, a great deal of the plume was well removed from the surface, at least during daytime conditions, to which aircraft sampling was restricted.

Trajectories from 5-Minute Average Winds

A detailed investigation of trajectories as indicated by the surface winds averaged over 5-minute intervals was also carried out for one case. The wind field was drawn in detail from all available wind information for each five minute interval; from this the plume travel was deduced and drawn on a map and, as would be expected, this technique yielded the best estimate of plume travel. The results of the trajectory predicted and observed for Mountain Iron Test 72 is shown in Figure 6. It is worthwhile to note that the curvature and spread of the ground pattern of exposure is, indeed, indicated in the wind pattern as well. No attempt was made to relate the spread of the estimated plume segment trajectories to the observed plume spread, but such a relationship would be worthy of future study.

The success of any trajectory analysis probably lies in accurate and rapid wind information. The WIND system should provide an adequate basis for well estimated plume paths, particularly if the trajectories are constructed by one familiar with the peculiarities of orographically distorted wind fields.

One of the by-products of the trajectory investigation was noting the persistent lack of correlation between the average wind field and the flow indicated by three of the WIND system sensors: 010 in Bear Creek

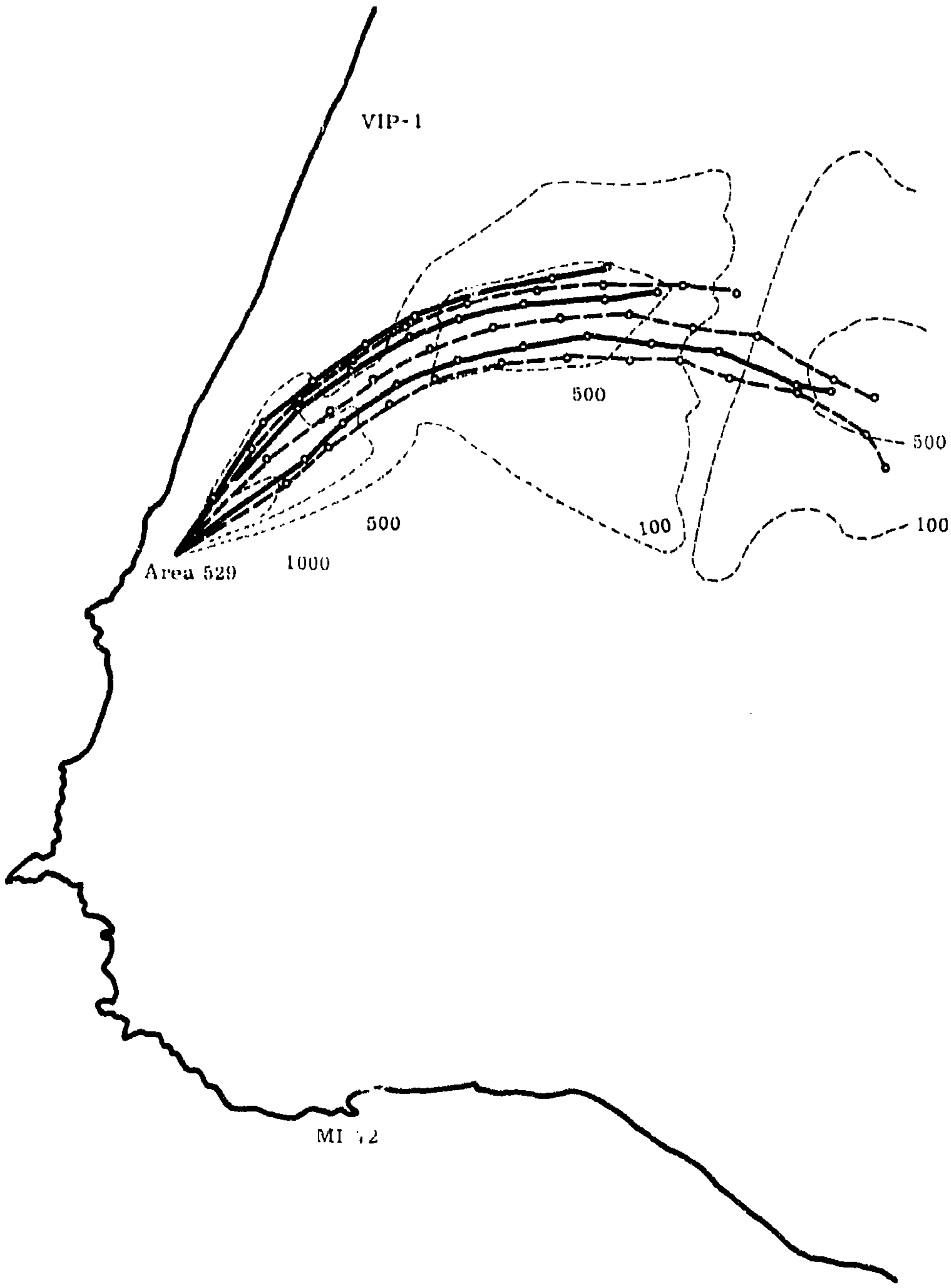

FIGURE 6. Example of Trajectory Predicted and Observed for MI-72

Canyon, 011 in Spring Canyon, and 012 in Honda Canyon. These sites appear to be very strongly influenced by the nearby walls of their respective canyons, so that their information is not at all indicative of the flow only a few hundreds of yards away. These sensors should be left where they are only if the data from these canyons are of primary importance. If their indications are used uncritically to construct wind fields, severe and erroneous curvature in the wind patterns will often result.

CHAPTER 3.
PHYSICAL AND CLIMATOLOGICAL DESCRIPTION OF SOUTH VANDENBERG

INTRODUCTION

A very brief description of the geography and climatology will be given here. In other chapters, the relation between terrain and diffusion will be discussed. The relatively short time available for collection of climatological data precluded any thorough climatological summary. However, the climatology published by Meteorology Research, Inc., in conjunction with an earlier study,[3] is still appropriate, and in many places provides insight into the meteorological phenomena at South Vandenberg.

THE SITE

South Vandenberg lies on a westward jutting portion of the California coast about a hundred miles west-northwest of Los Angeles (Figure 7). The Coast Range Mountains dwindle into the ocean along this section of the coast, and form the eastward buttresses of the Santa Ynez Mountains which culminate in 4000-foot high ridges several miles east of South Vandenberg. The mountains are characterized by ridges 1000 to 1500 feet high, running generally east-west, with 2000-foot high peaks along the southern portion of South Vandenberg. The most striking feature is probably Honda Canyon, a rather deep and steep-sided canyon, walled on the south by Honda Ridge and on the north by Target Ridge. The canyon is some 700 or 800 feet deep along most of its length, and is generally no more than 1 1/2 miles across. Smaller canyons, which are not so deep but even narrower (opening mostly north and east), branch from these two main ridges. The result is a broken appearance which is much more rugged than the description in feet and miles implies. The prominent terrain features on South Vandenberg are identified in Figure 8. The northwest portion of South Vandenberg is the Lompoc Terrace--several square miles of level and rolling grassland

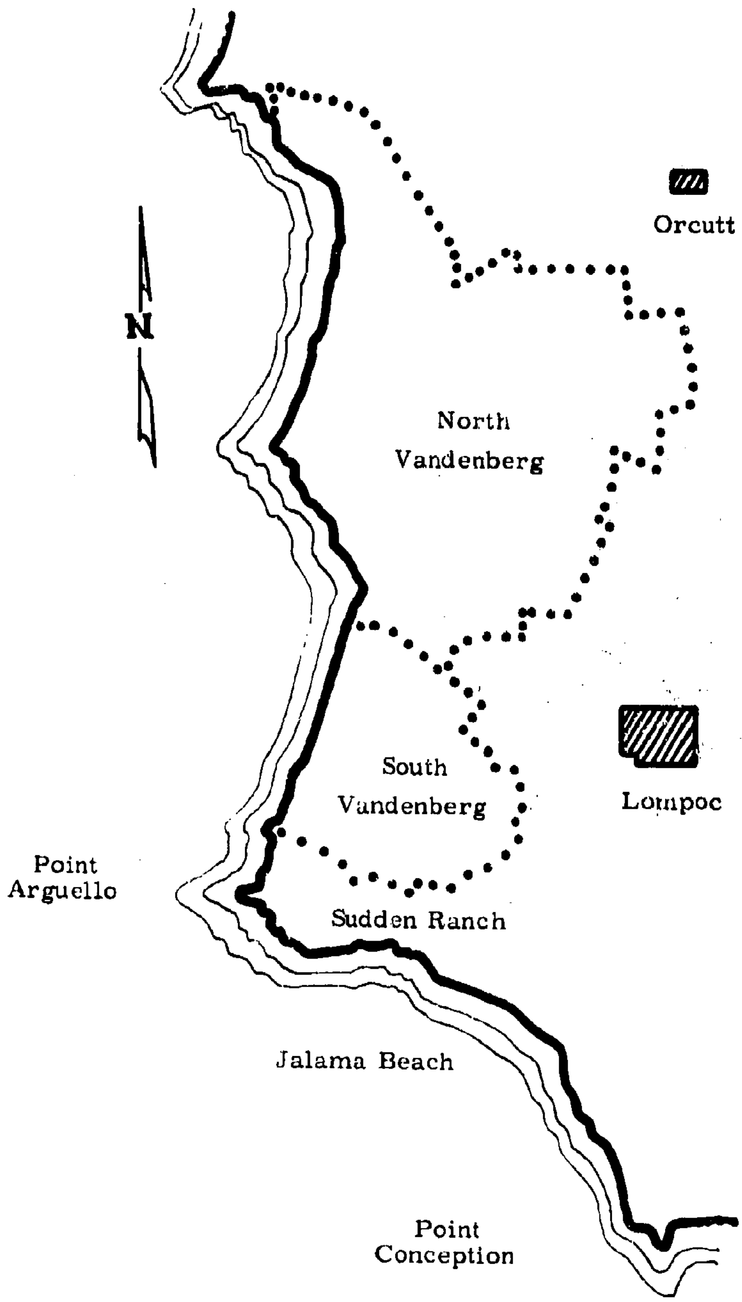

FIGURE 7. Vicinity Map

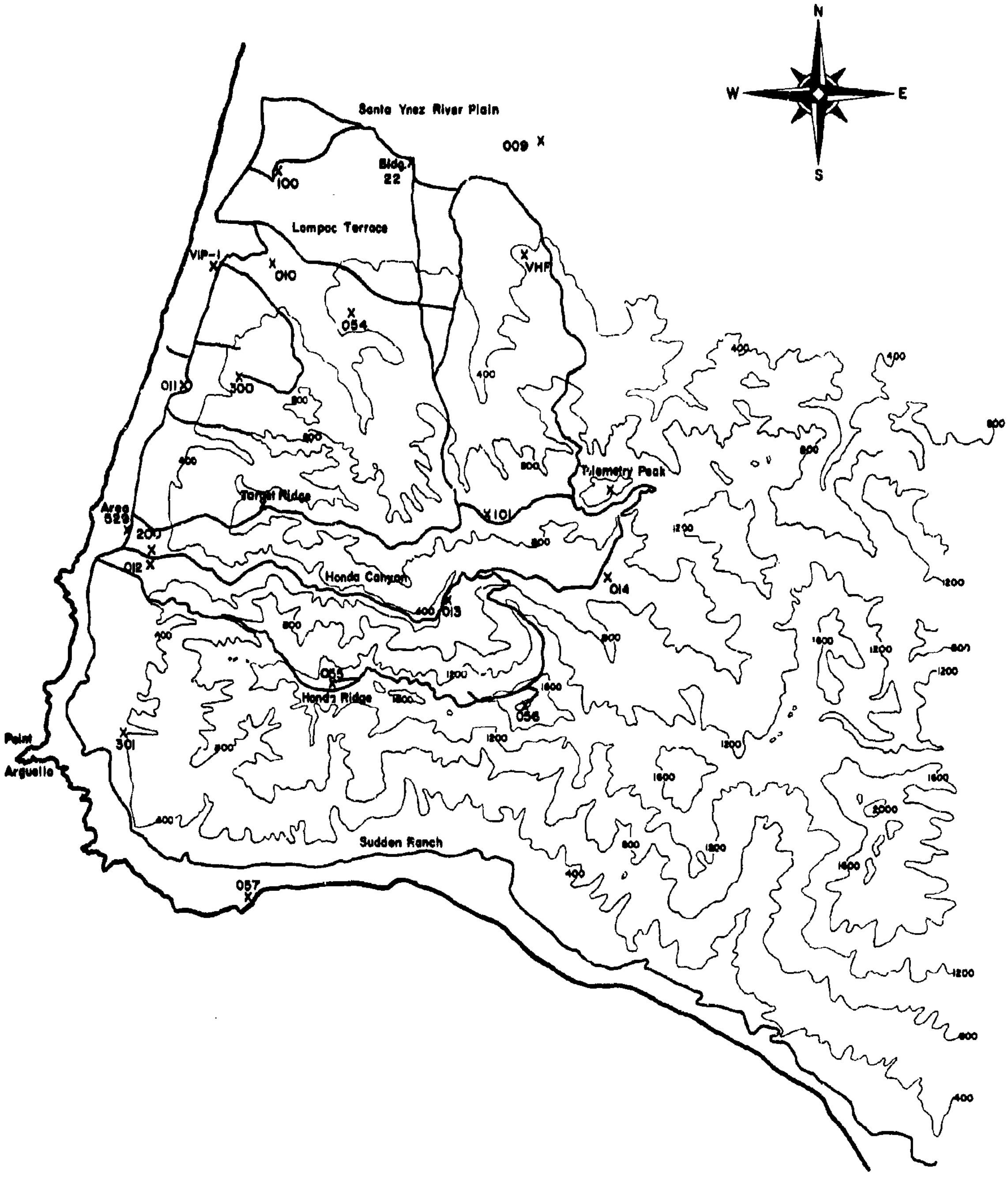

FIGURE 8. Prominent Terrain Features, MI-Phase I

only a few hundred feet above the ocean. North of this plateau lies the very flat flood plain of the old Santa Ynez River; from this smooth river bottom, the Santa Ynez Mountains rise abruptly like a pile of sand on a table top. The coastline lies nearly north-south along the portion of South Vandenberg north of Honda Ridge, then turns more than 90 degrees to east-west along the southern border south of Point Arguello. This abrupt curvature of the coast appears to be related to the common occurrence of northwest winds over South Vandenberg that veer to west winds over Point Conception a few miles south of Point Arguello.

The major ridges on South Vandenberg are mostly covered with a dense stand of low growing chapparal and related shrubs, as shown in Figure 9, whereas the low lands are generally grassland--the floor of Honda Canyon, the Sudden Ranch area, and the Lompoc Terrace being examples. Trees occur in scattered clumps only, except east of the head of Honda Canyon and along creek beds. The vegetation types change rather rapidly with increasing distance from the ocean; trees occur in increasing number following the generally increasing average precipitation inland in this area.

CLIMATOLOGY

The period of time during which Operation Mountain Iron Phase I was fully operational spanned only eight months, much too short for a climatological summary. However, wind data from several sites were available for many days of the months between January 1966 and July 1966. The midseason months--January, April and July--were chosen for complete reduction of all wind data available from several sites: 100, VHF, 200, Target Ridge, 101, 055 and 301 (when available). The wind data were read as 30-minute averages centered on the quarter hours, with direction read to 8 points of the compass and speed in 5 knot increments or calm.

The data were then summarized by averaging over all days of the month and over a given time interval. The time intervals chosen were

FIGURE 9. Vegetation on Major Ridges of South Vandenberg

1/2, 1, 2, 3, 4, and 6 hours, starting at 0000 hours. A tabulation of the summary is included as Appendix B in Volume I. Included in the monthly summary for each site is the highest observed 30 minute average wind speed, the direction from which it came, the percentage distribution of wind directions in the given time period, and the average speed during that time period.

A fairly complete picture of wind patterns over Southern California is given by Demarrais, Holzworth and Hosler[4] for the mid-season months. By use of their regional analysis as a backdrop and the data presented here for details of flow over South Vandenberg, a fairly reliable generalized picture of transport near Vandenberg should be possible. To illustrate the patterns over South Vandenberg, a series of maps are included in Appendix C, Volume I; these maps show the most probable 1-hour average wind direction for day and night conditions during the 3 midseason months.

ACKNOWLEDGMENTS

The Mountain Iron program began with the recognition of the range safety pollution problem by Brig. Gen. J. W. Maxwell, then Commander, AFWTR. Coordination, meteorological support, and considerable cooperation in forecast effort were amply and continuously provided by Detachment 30, 6th Weather Wing, presently under the command of Col. R. F. Durbin. Maj. G. A. Almes, Jr., and MSgt R. A. Glenn, Detachment 30, were most helpful in providing technical assistance. Extensive upper air sounding was ably performed by the 6th Weather Squadron (Mobile), 6th Weather Wing, and by the U.S. Weather Bureau, under the direction of N. J. Asbridge.

Battelle-Northwest personnel were involved early in the program. A viable experimental design was the result of considerable effort by K. H. Larson; the vigorous data gathering effort, headed by H. G. Daubek, contributed greatly to the program's success. J. J. Fuquay, Manager of the Environmental and Radiological Sciences Dept., played a significant role in the inception and development of the program. Continuing direction and support of the program were provided by C. L. Simpson, Manager of the Atmospheric Sciences Section.

Practically the whole of the Atmospheric Sciences Section contributed at one time or another to the data reduction effort; especial recognition is given B. N. Nelson, Jr., for his sustained effort in analysis of volumes of data. The direction of analysis of the many data stemmed directly from discussions with Dr. C. E. Elderkin, Manager of the Theoretical Meteorology Unit; throughout the program, his contributions were critical and legion.

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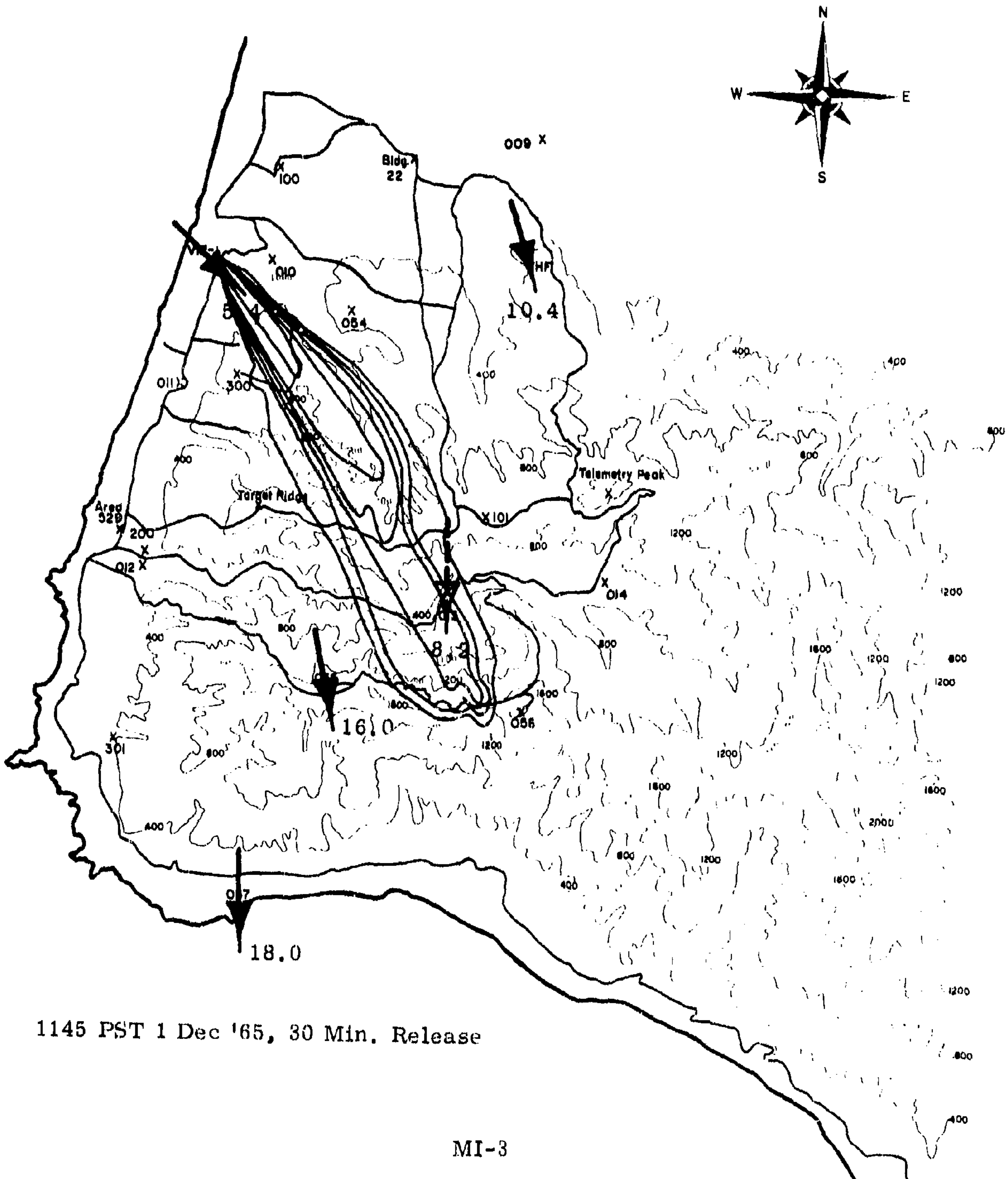
APPENDIX A

MOUNTAIN IRON PHASE I TEST PLUME PATTERNS

APPENDIX A

MOUNTAIN IRON PHASE I TEST PLUME PATTERNS

Some of the 113 tests from two generation (source) points on South Vandenberg are sufficiently interesting to include for reference. It must be understood that the plume patterns presented are not definitive for diffusion prediction, but they do provide an orientation and insight into the cliniotological regime.



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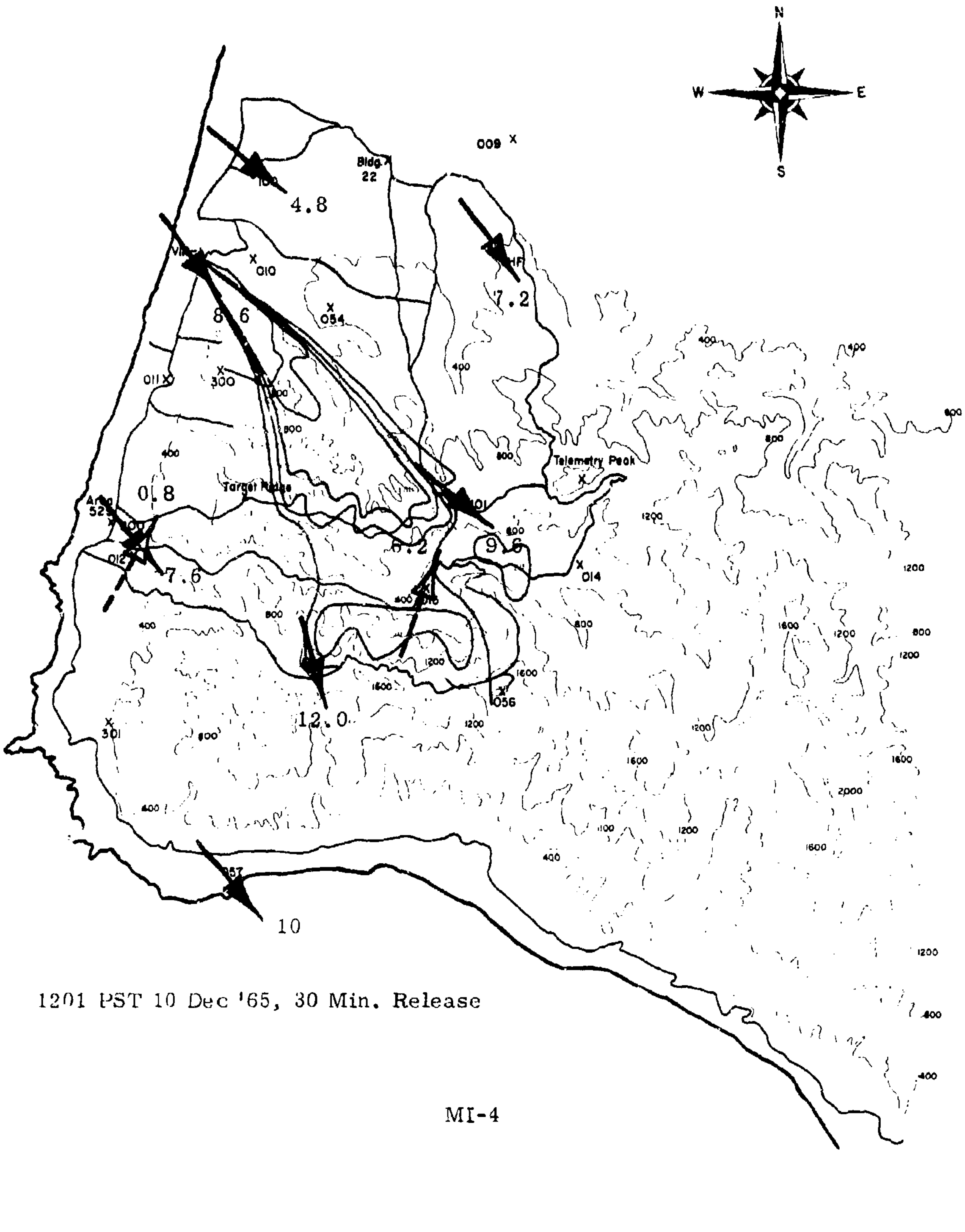

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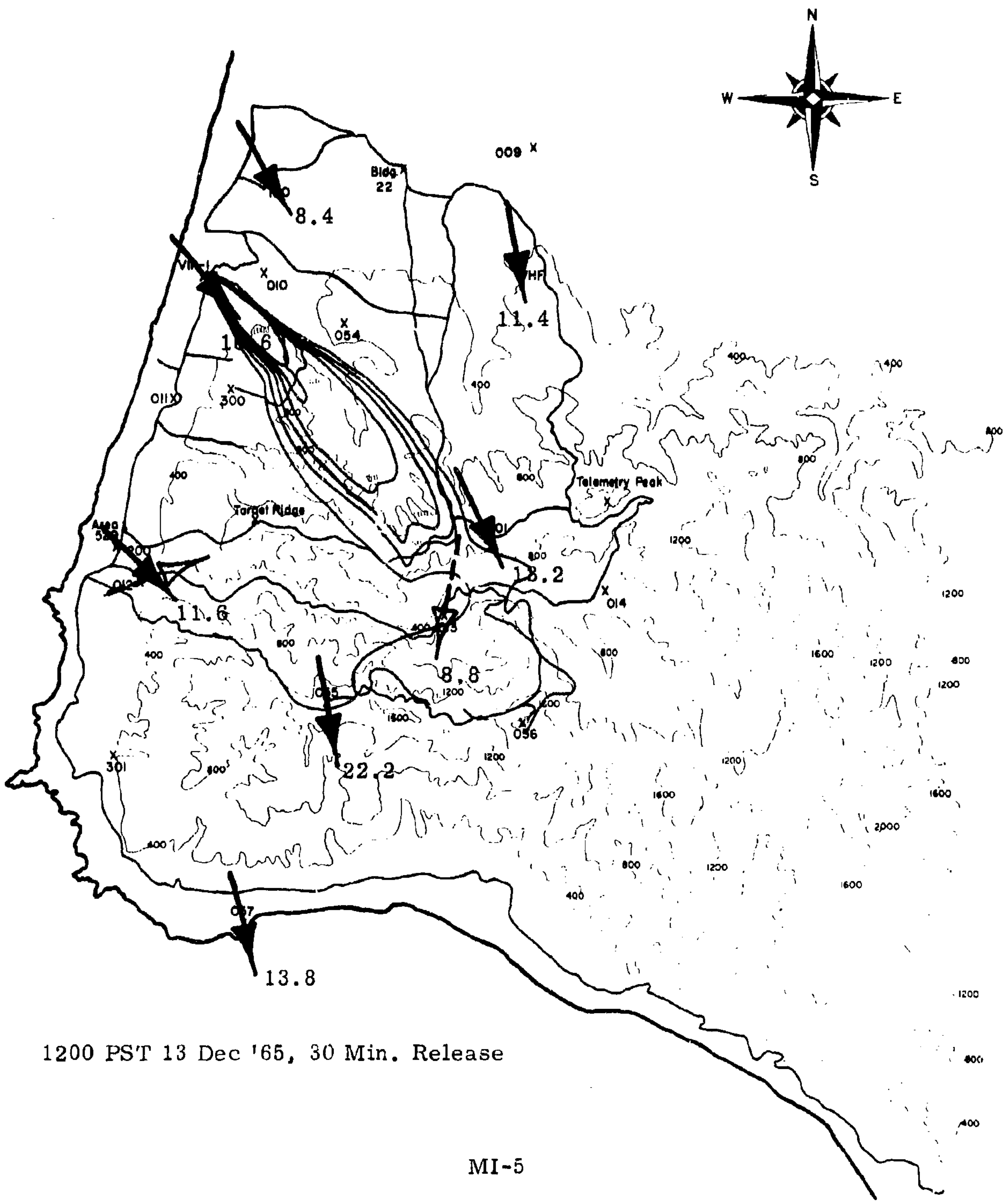

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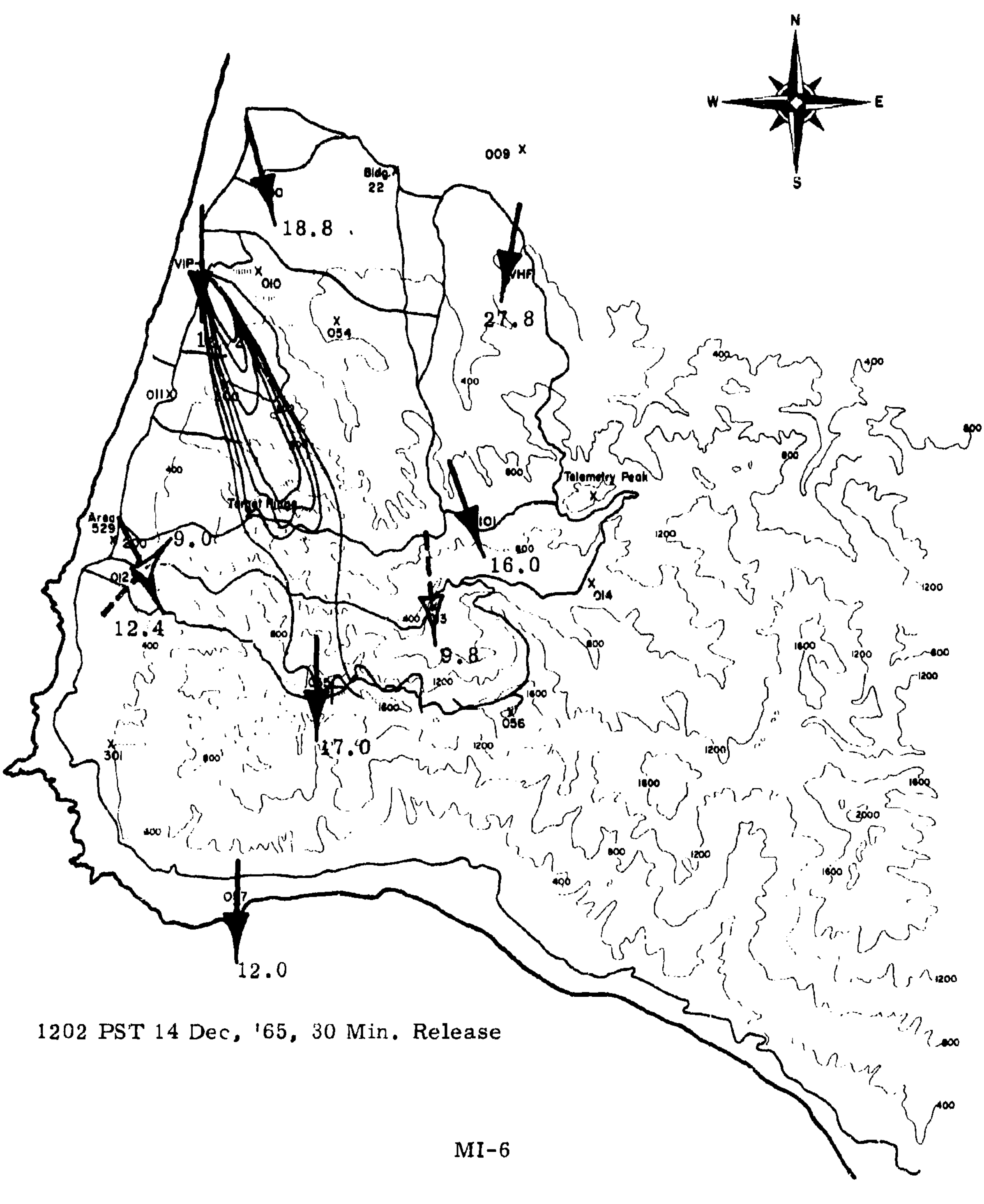

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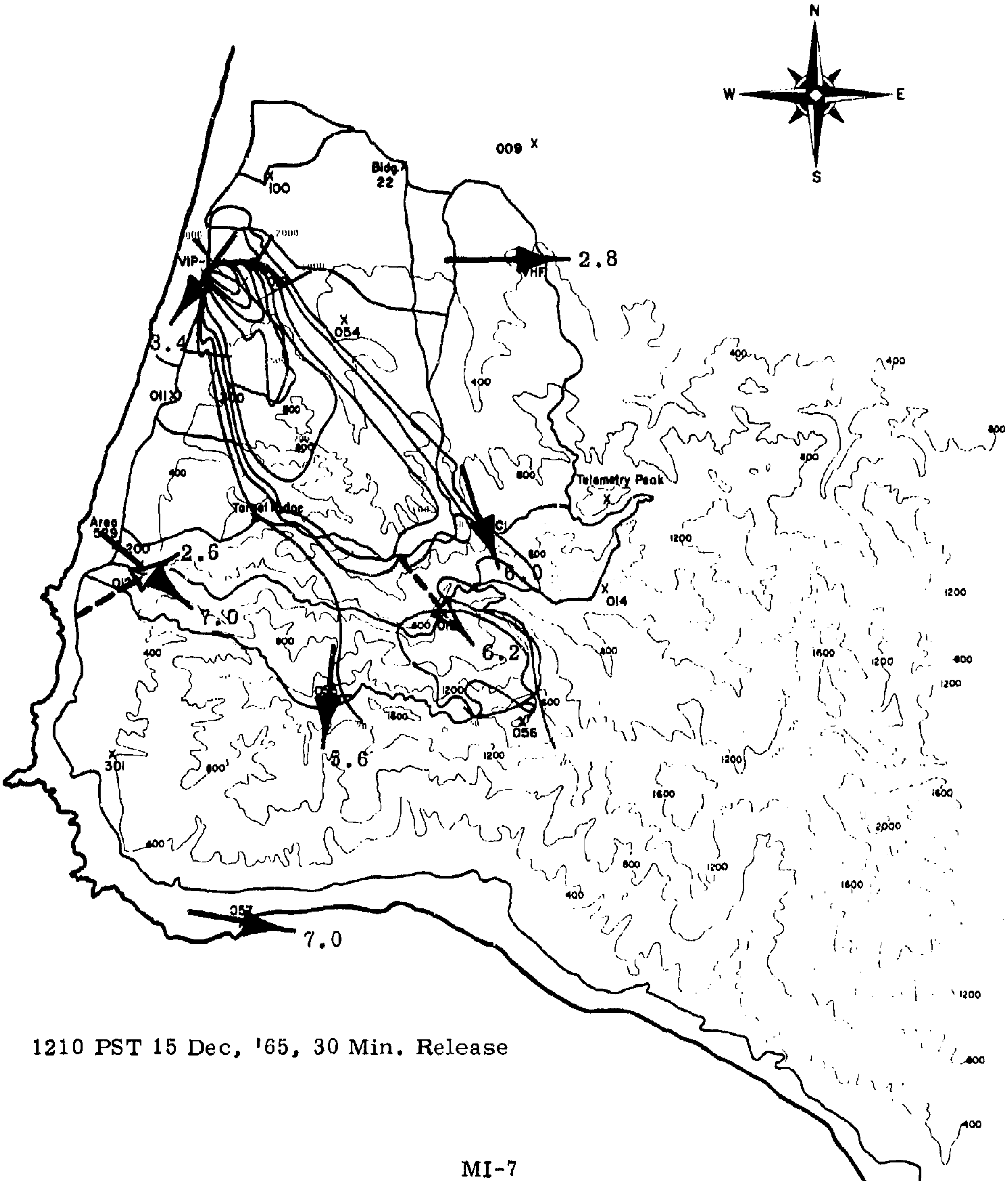

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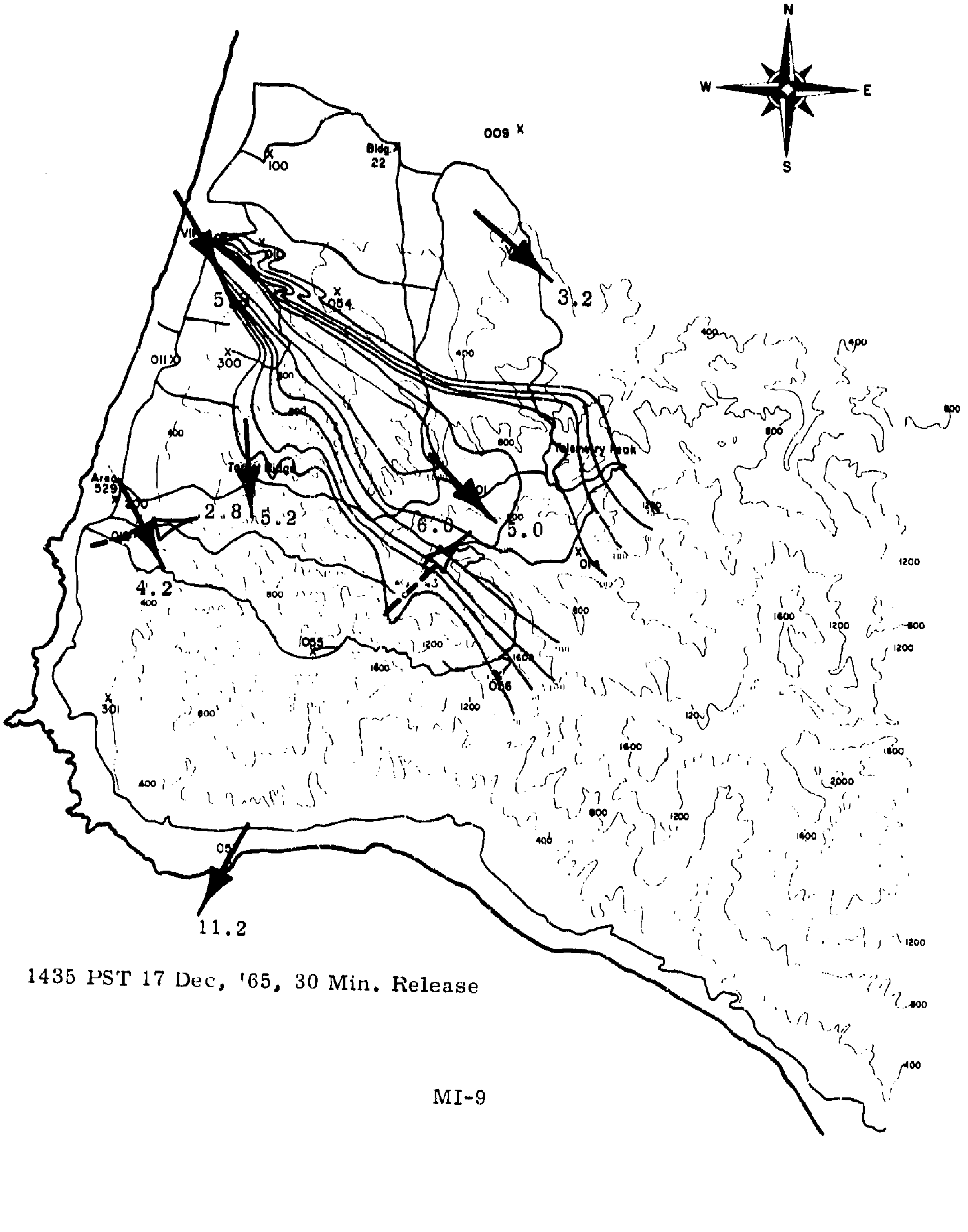

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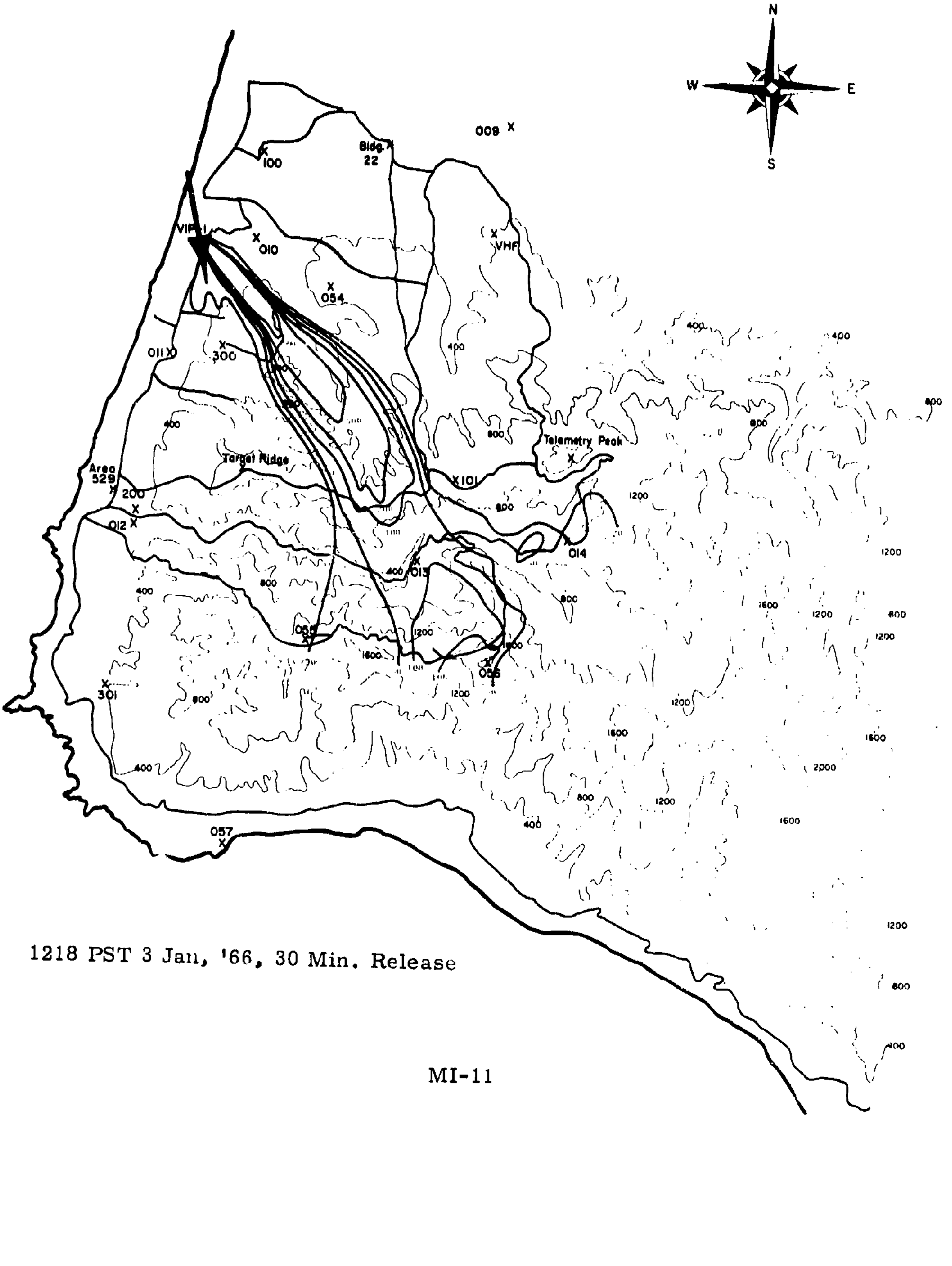

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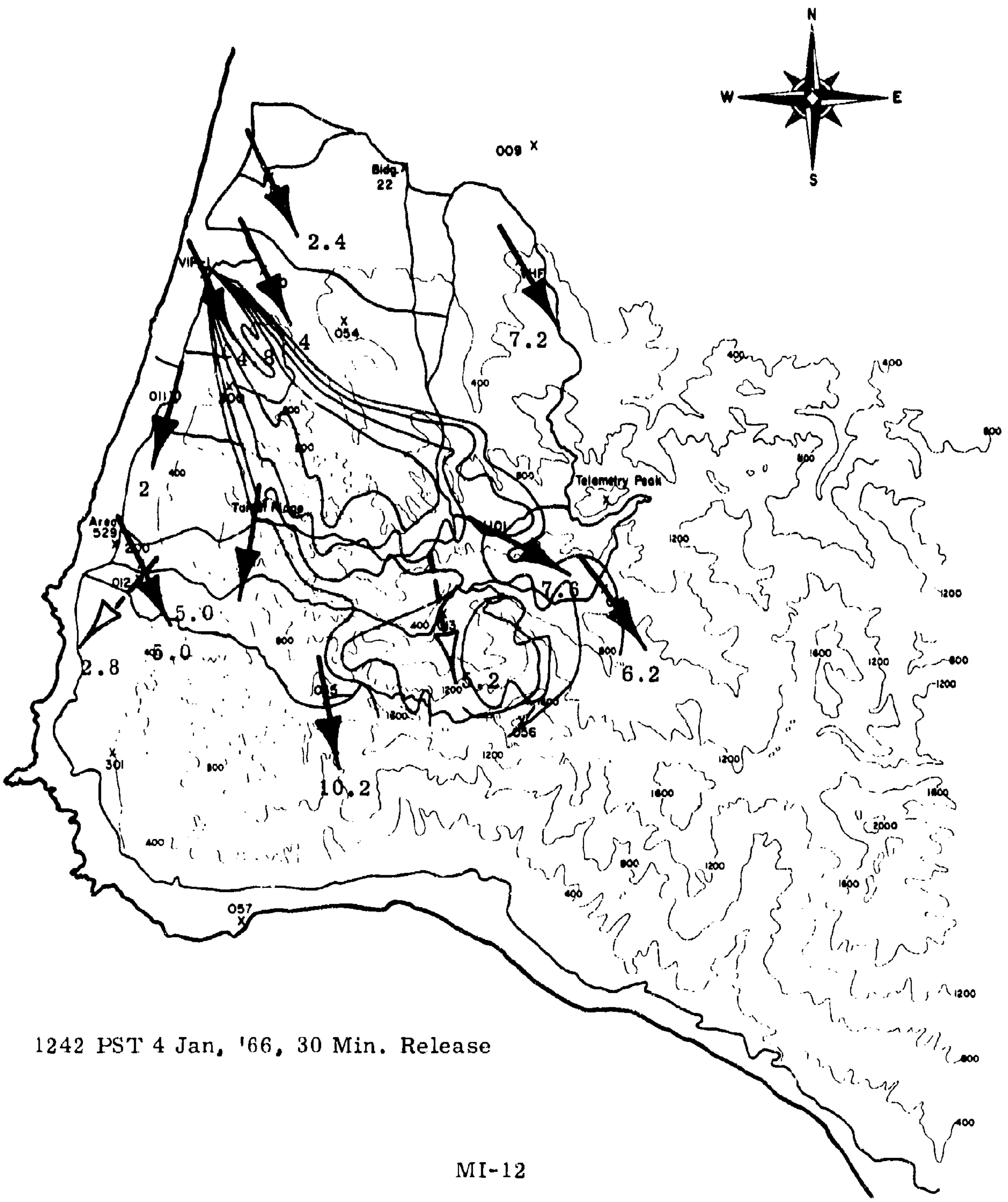

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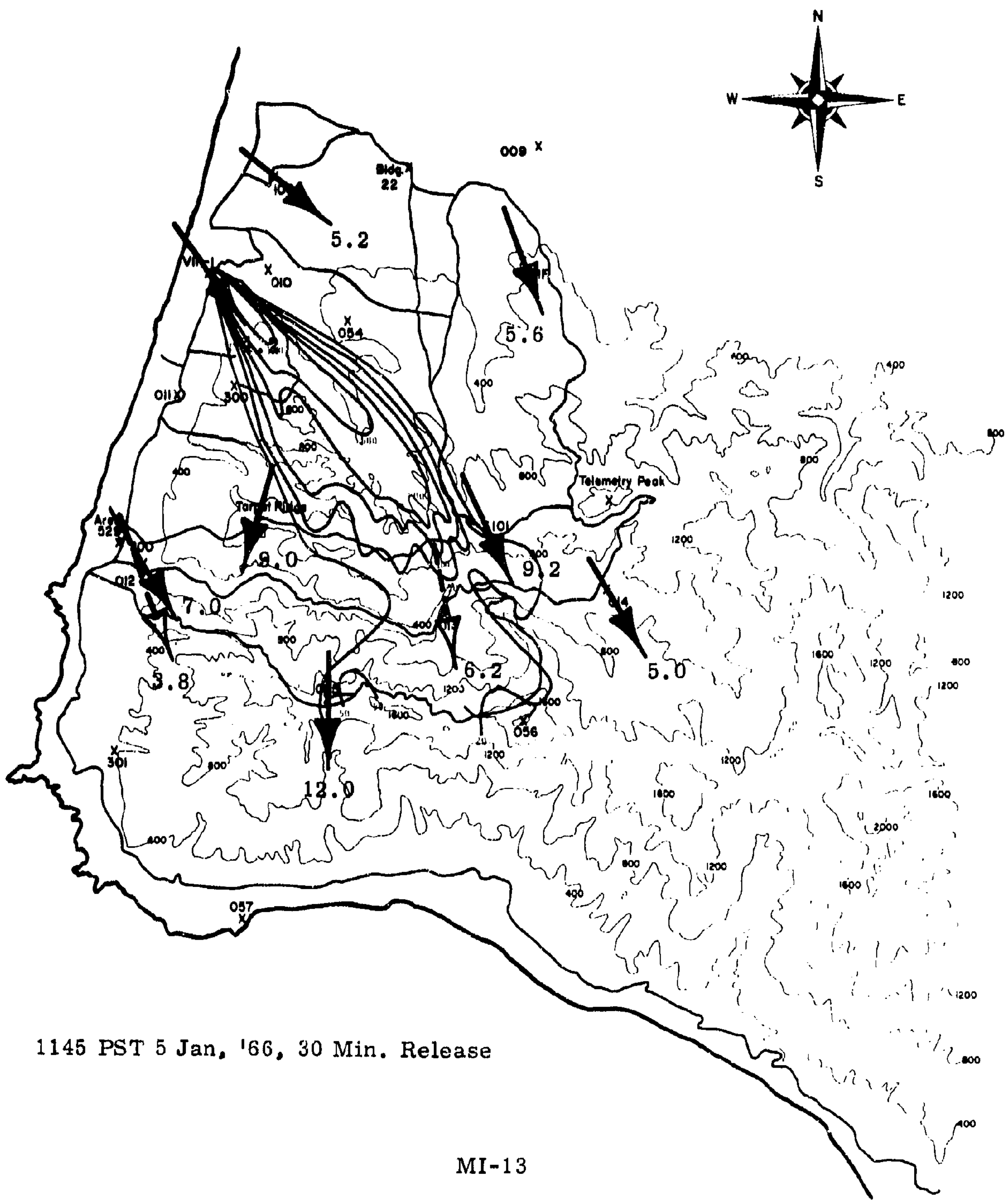

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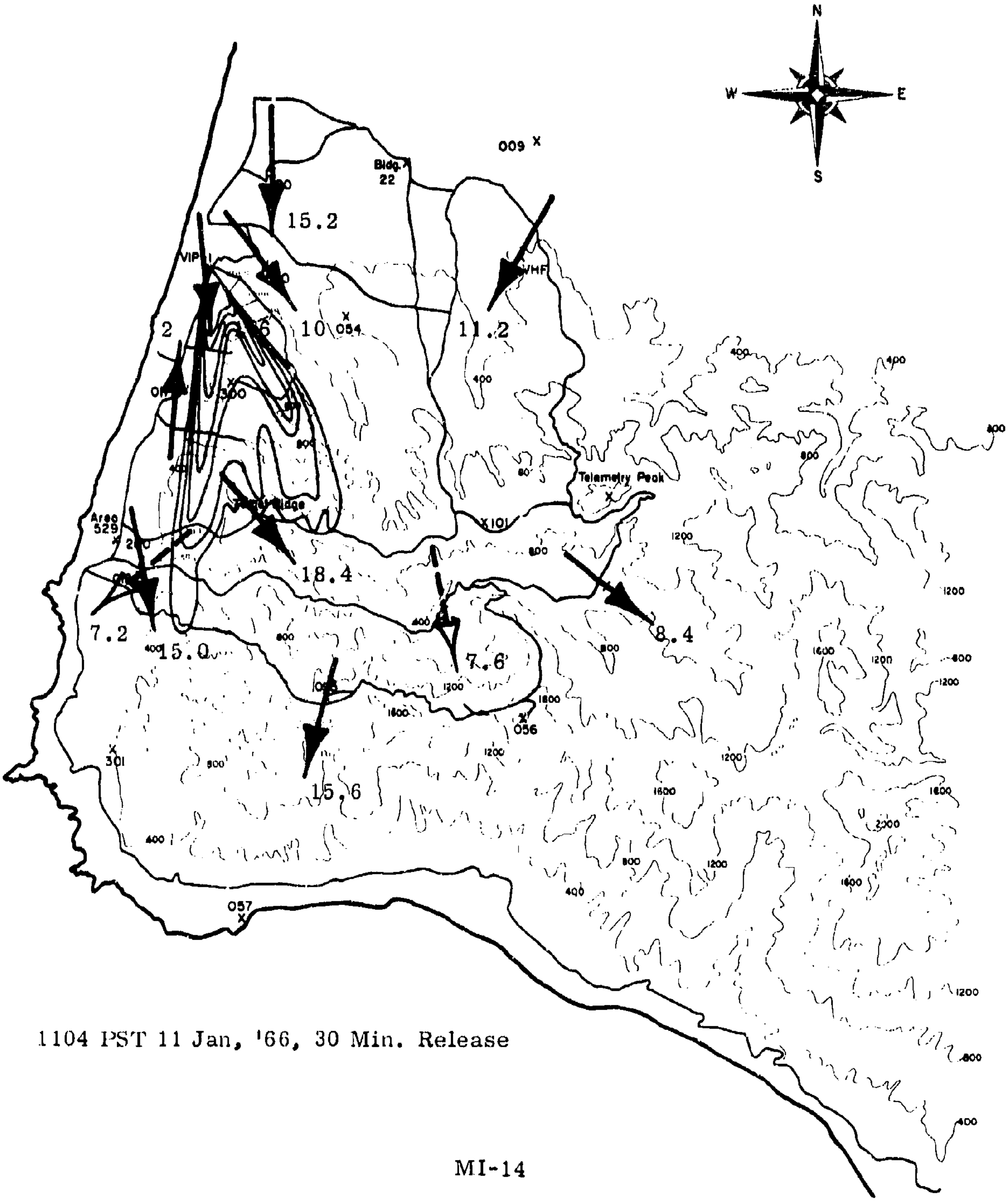

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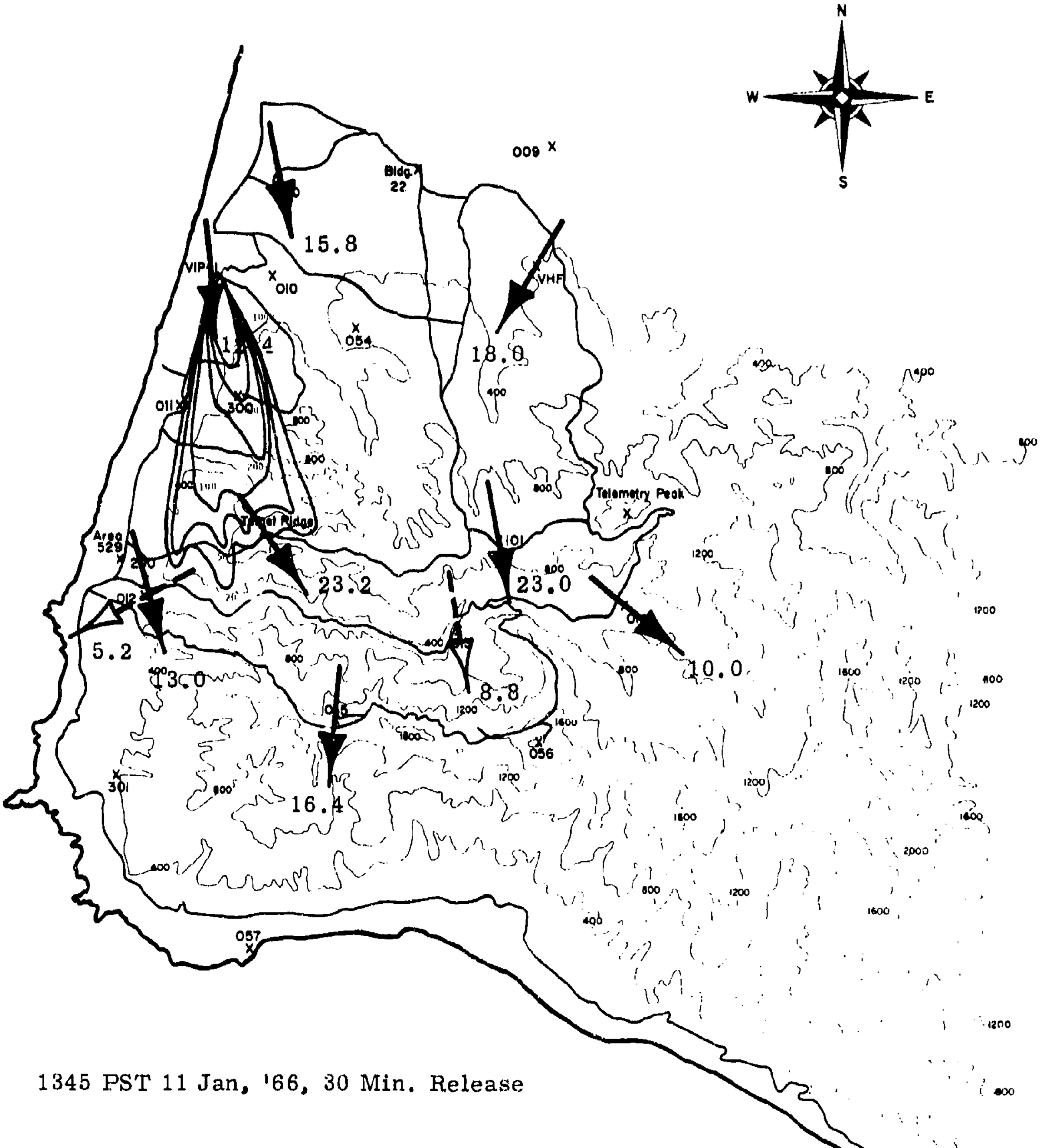

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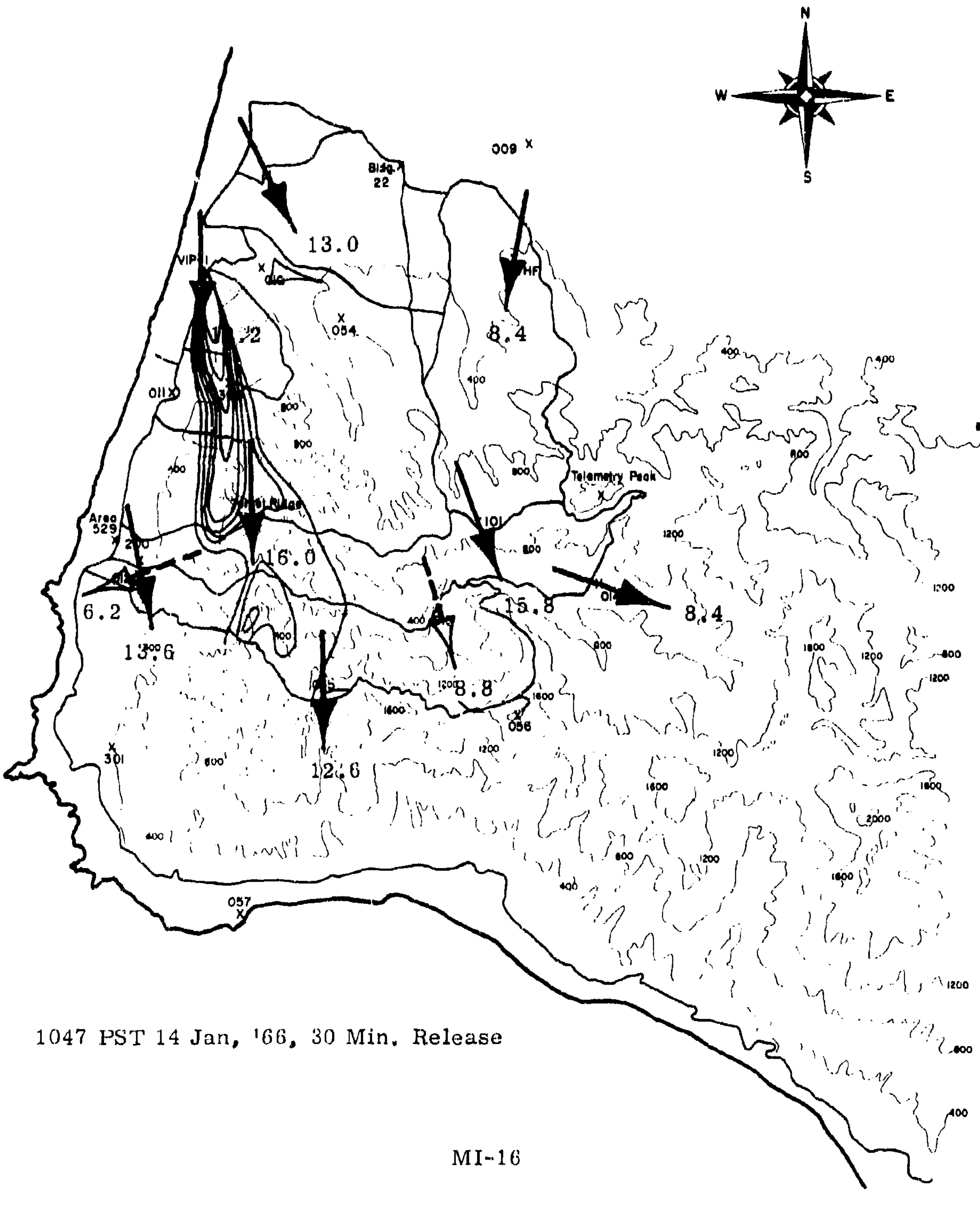

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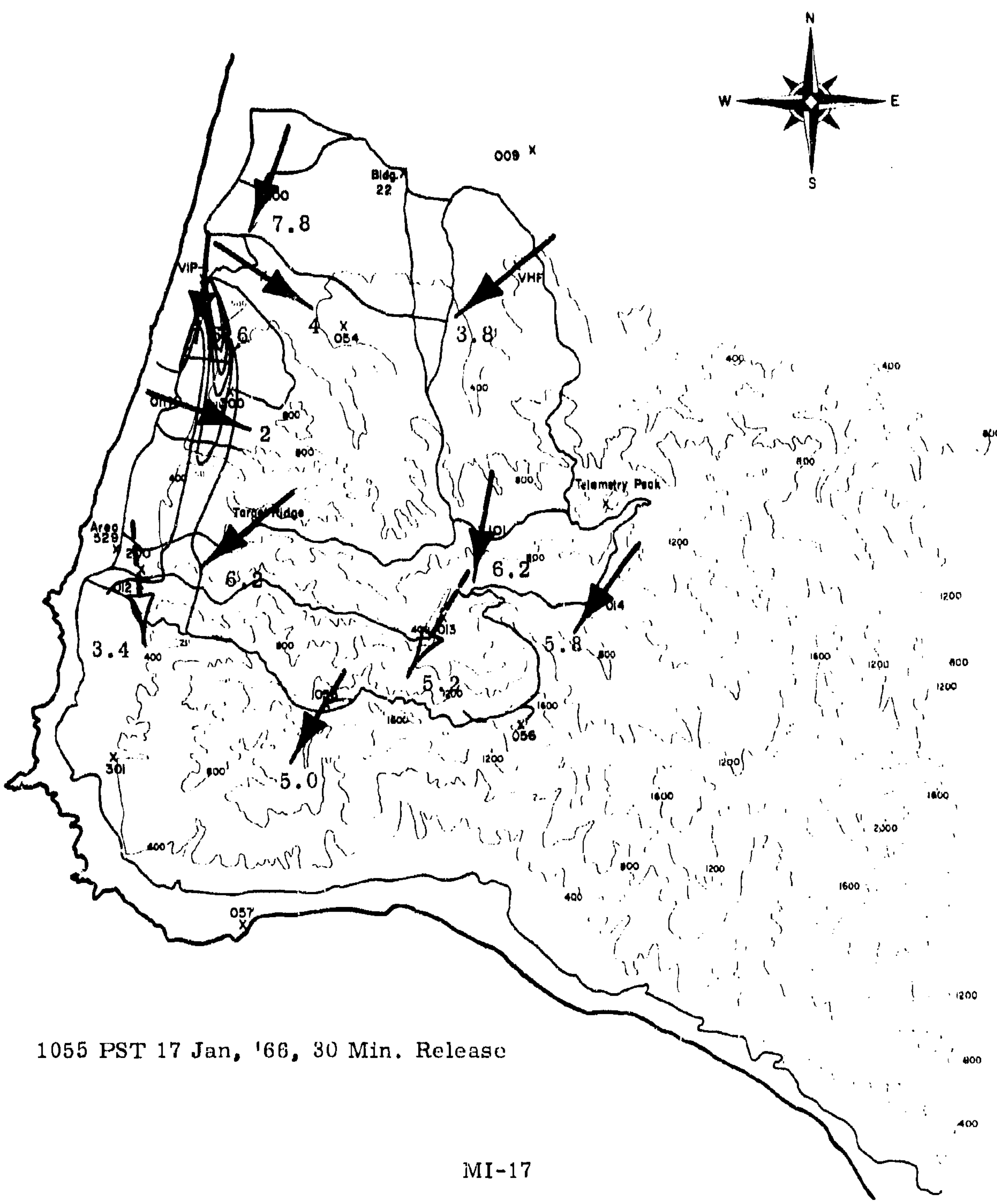

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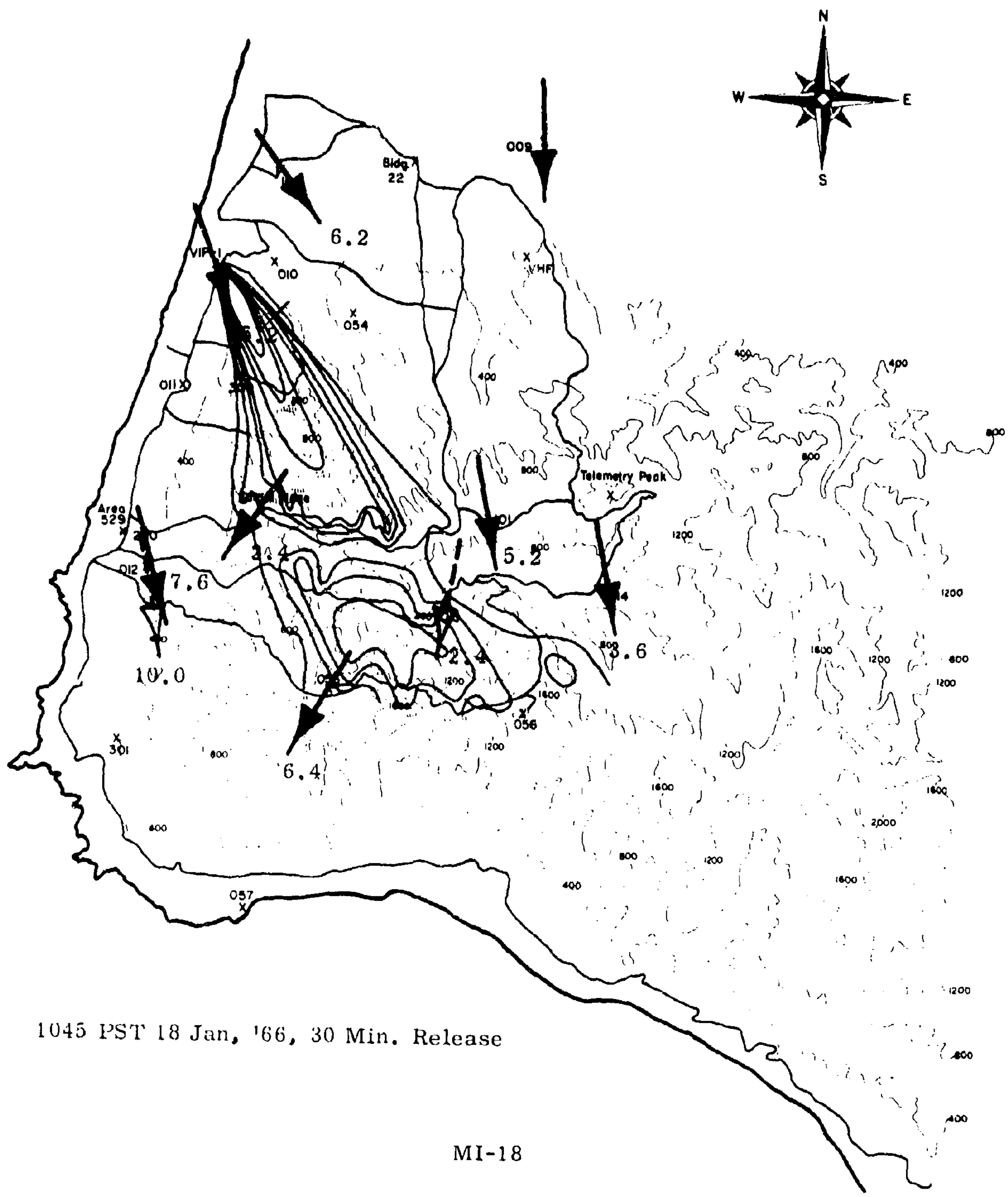

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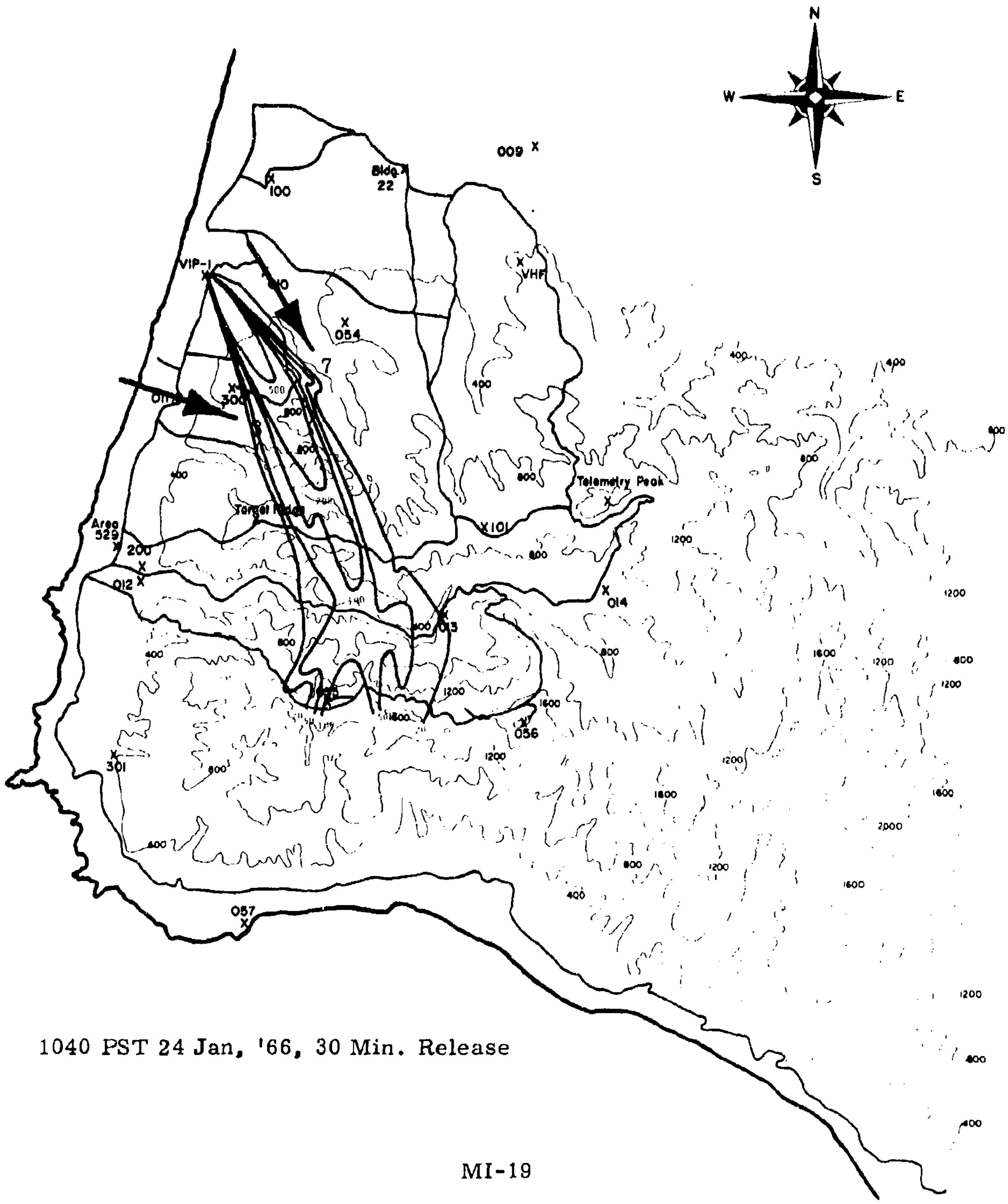

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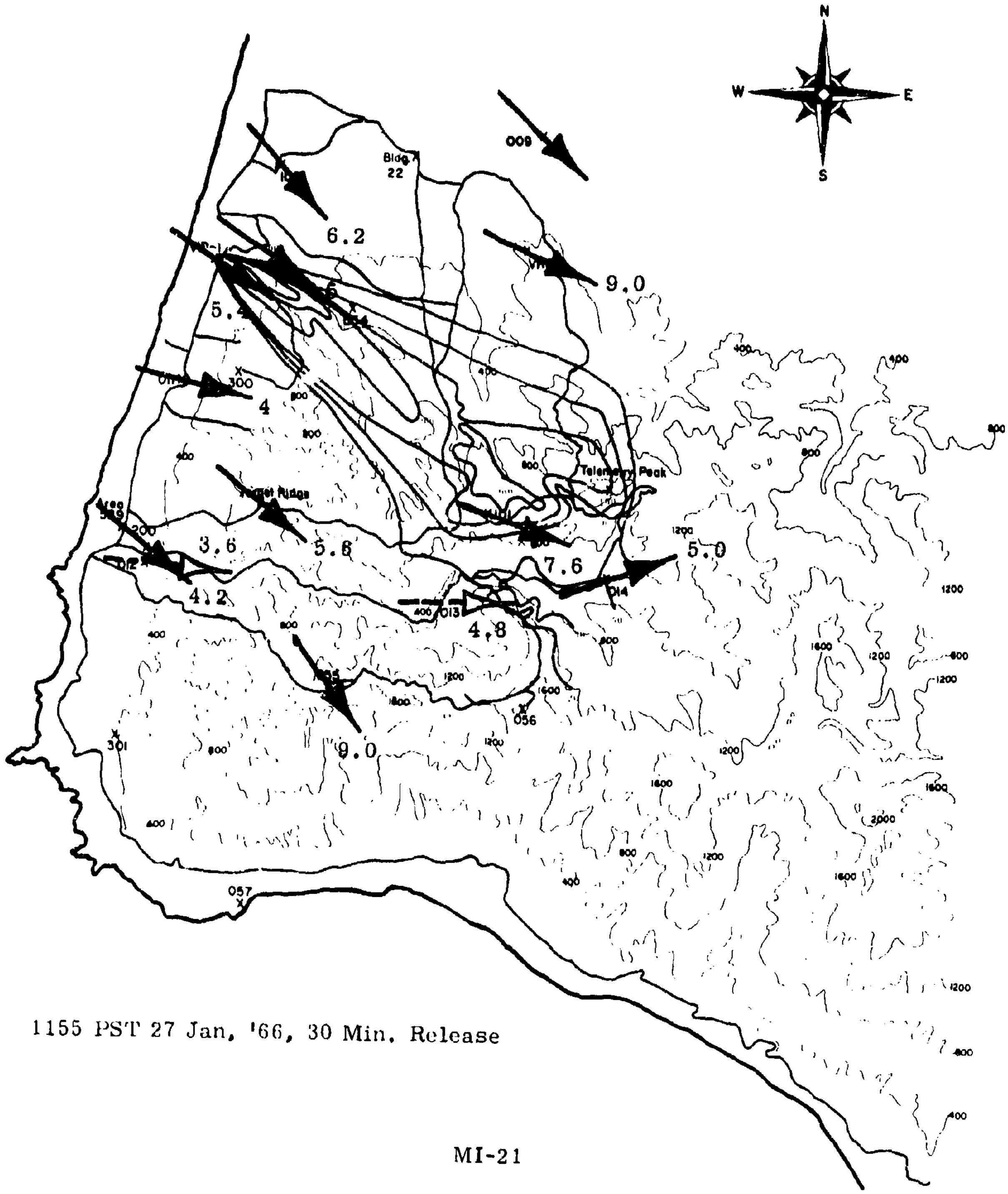

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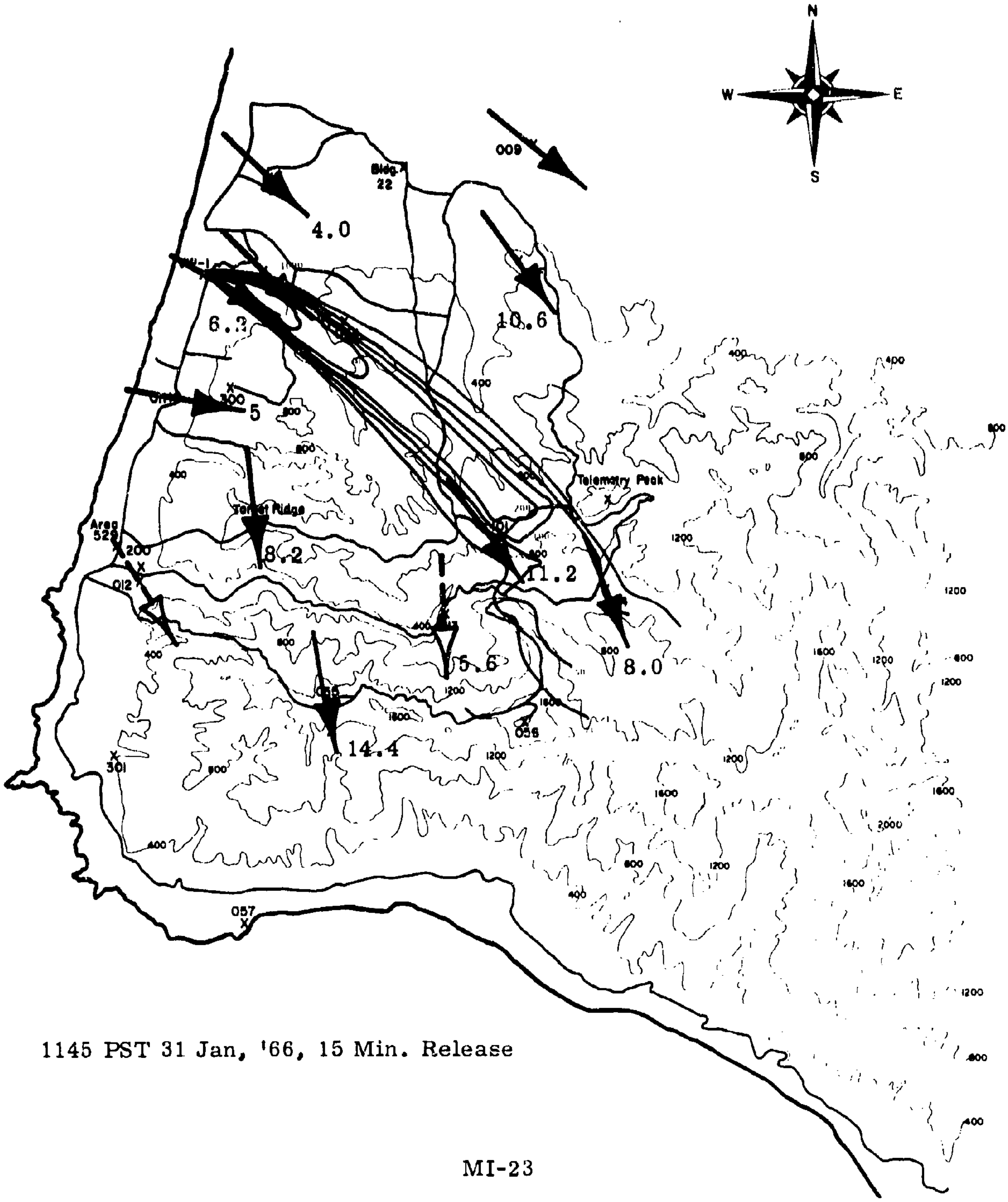

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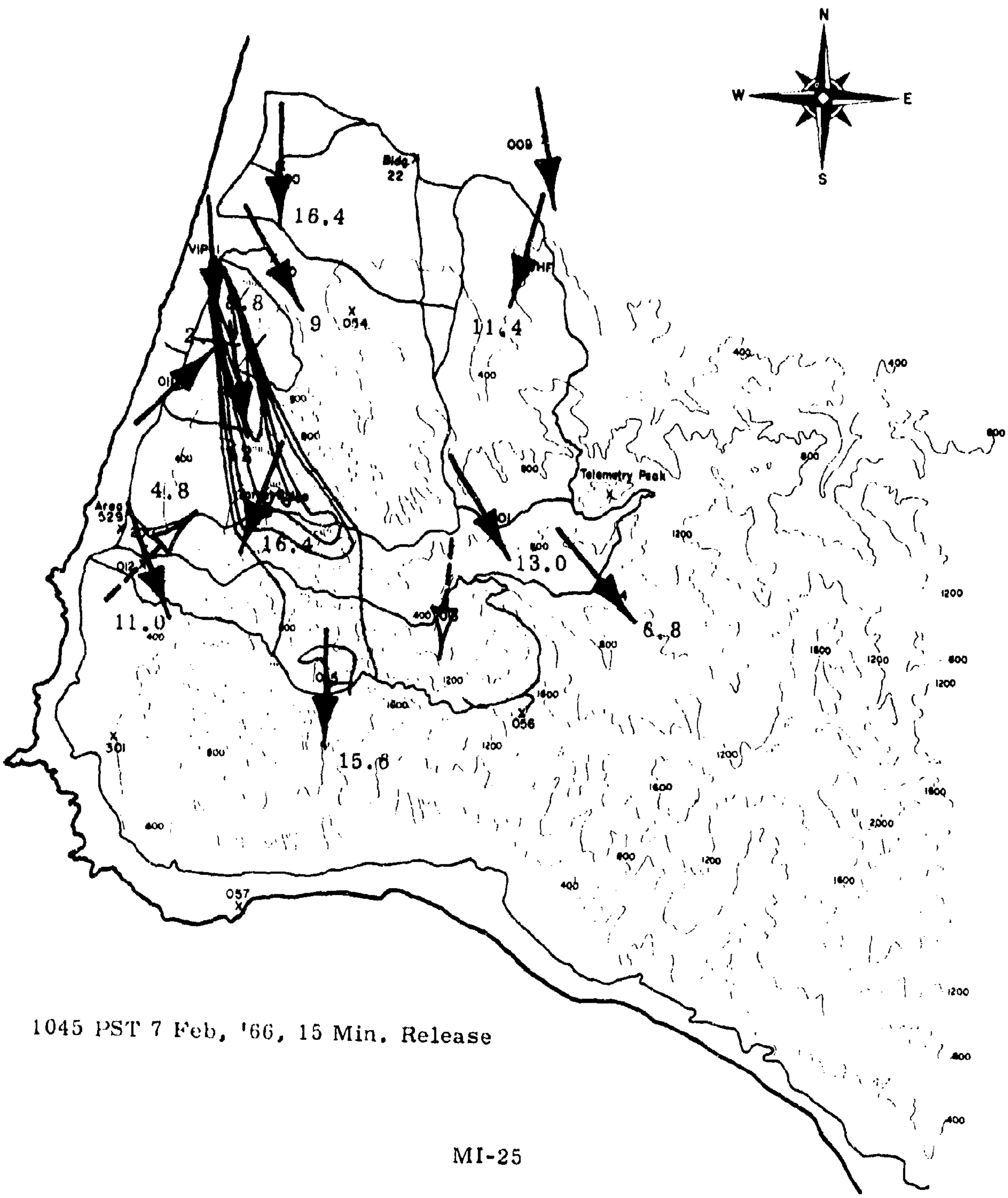

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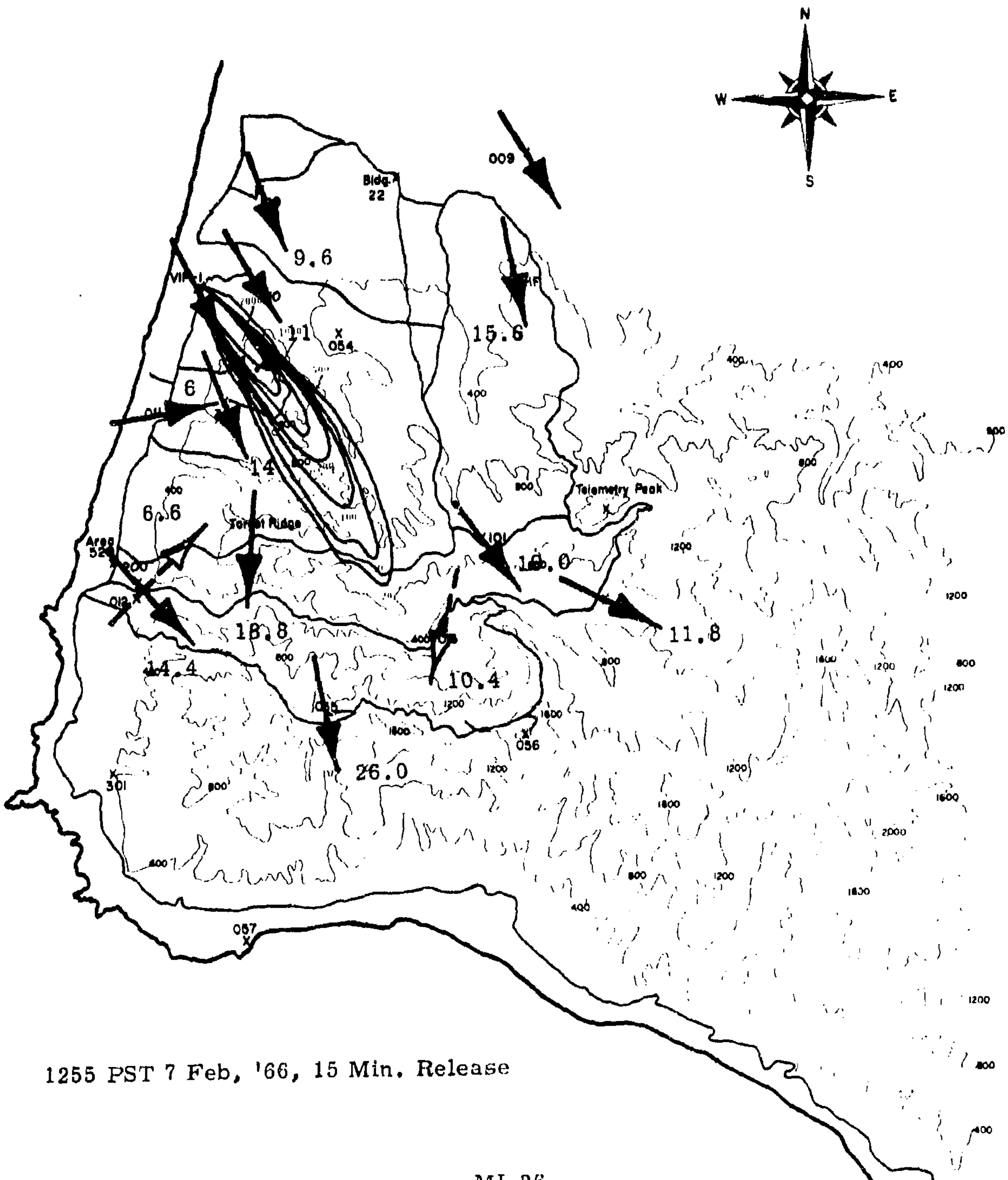

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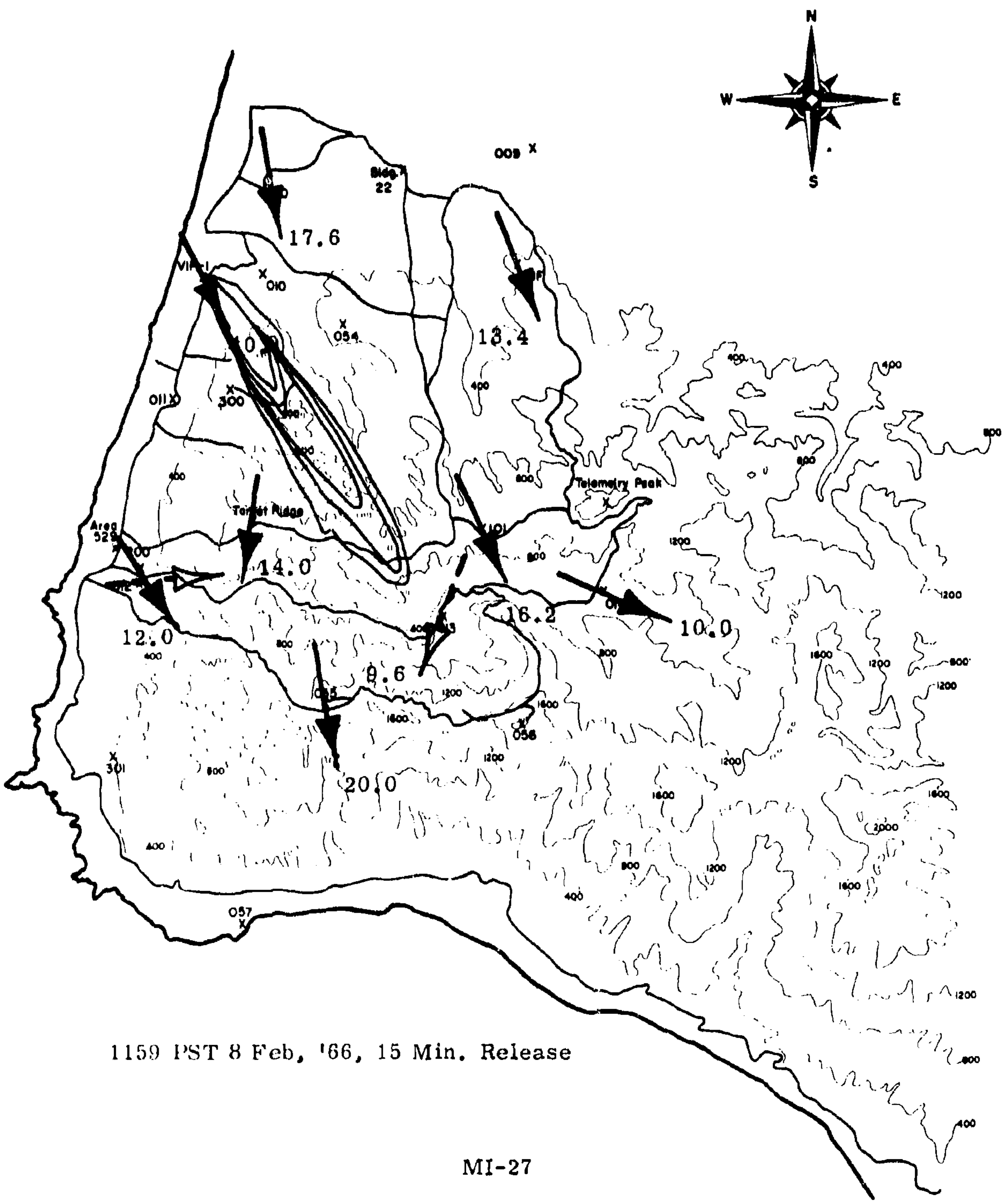

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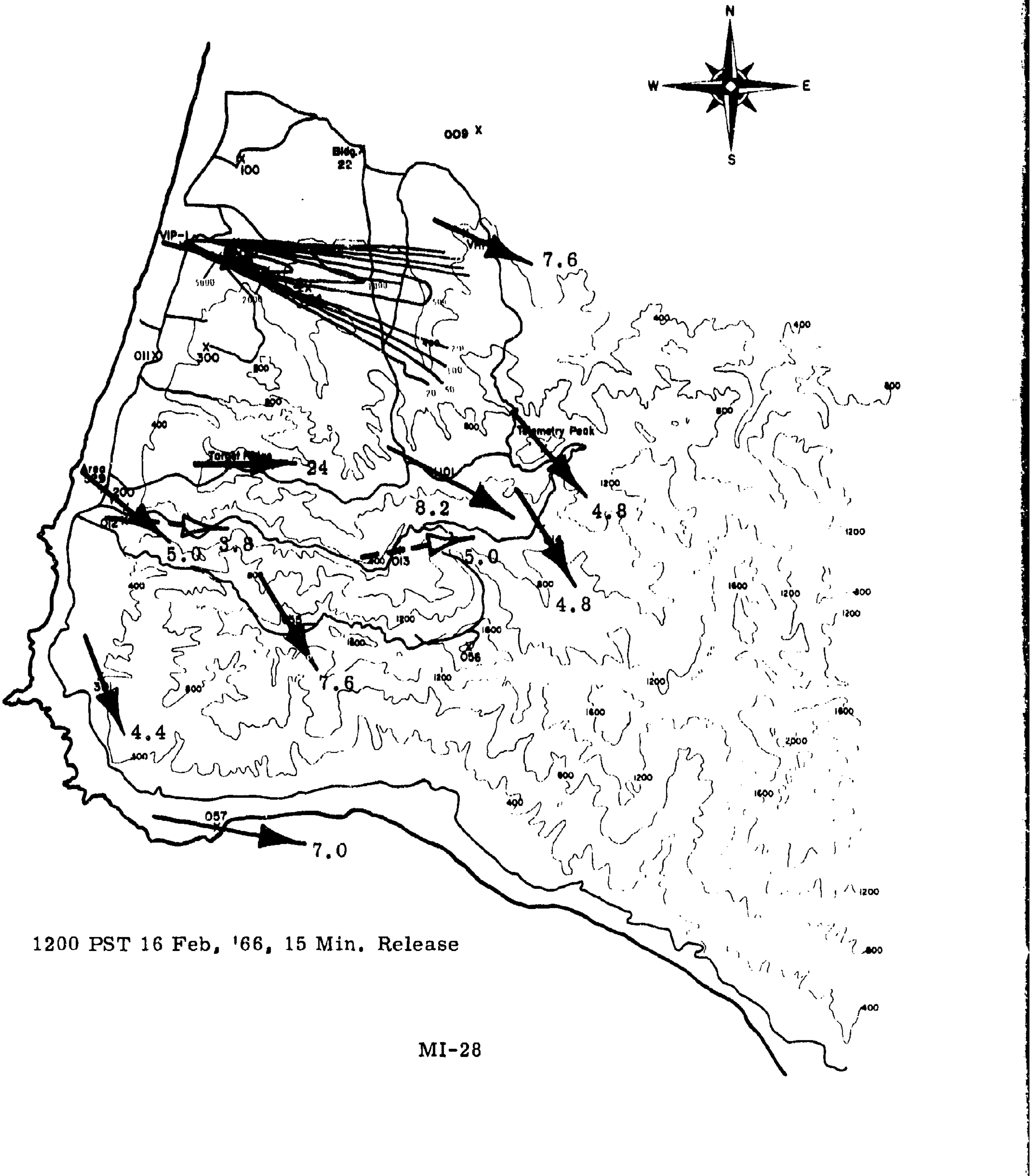

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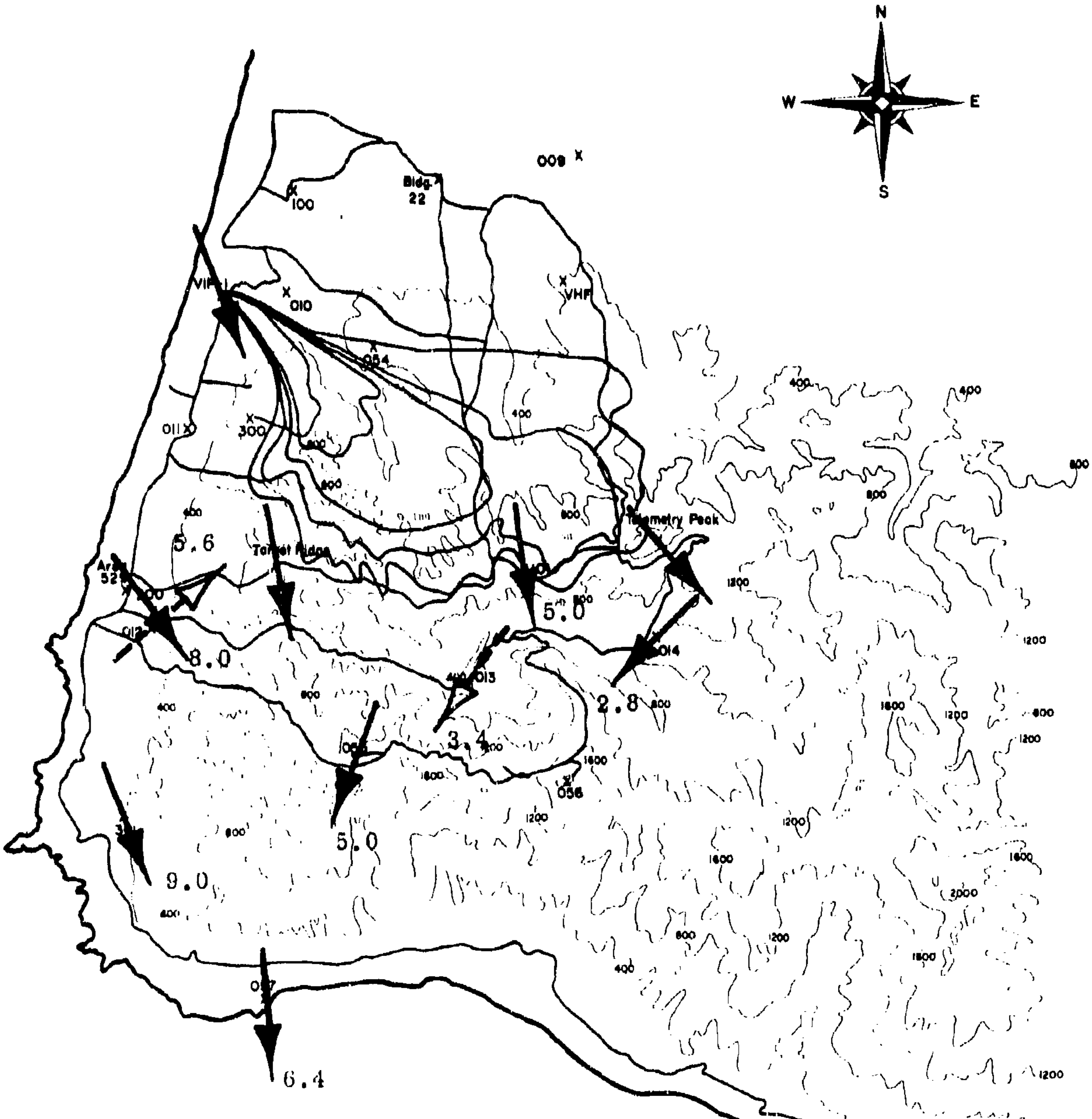

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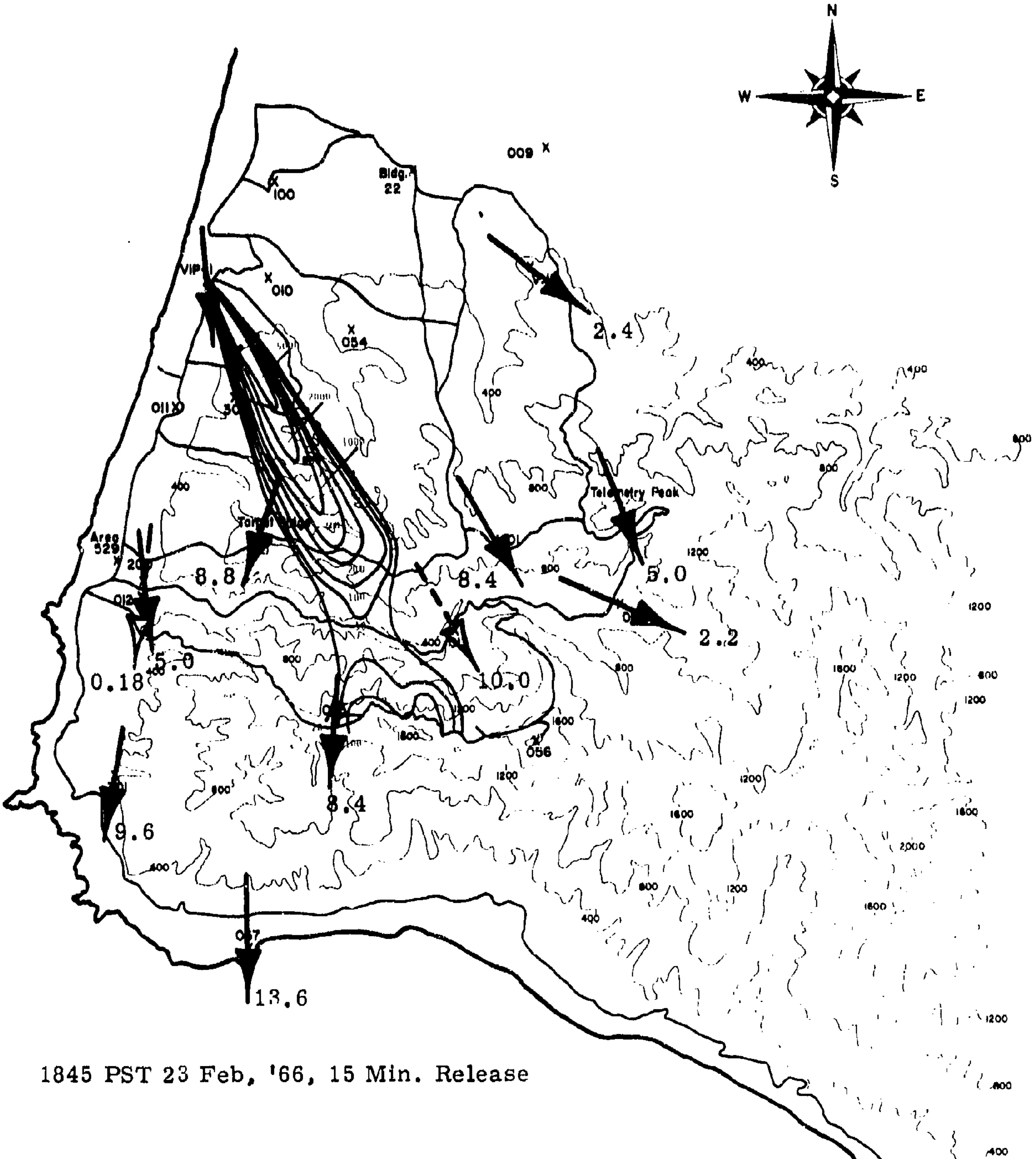

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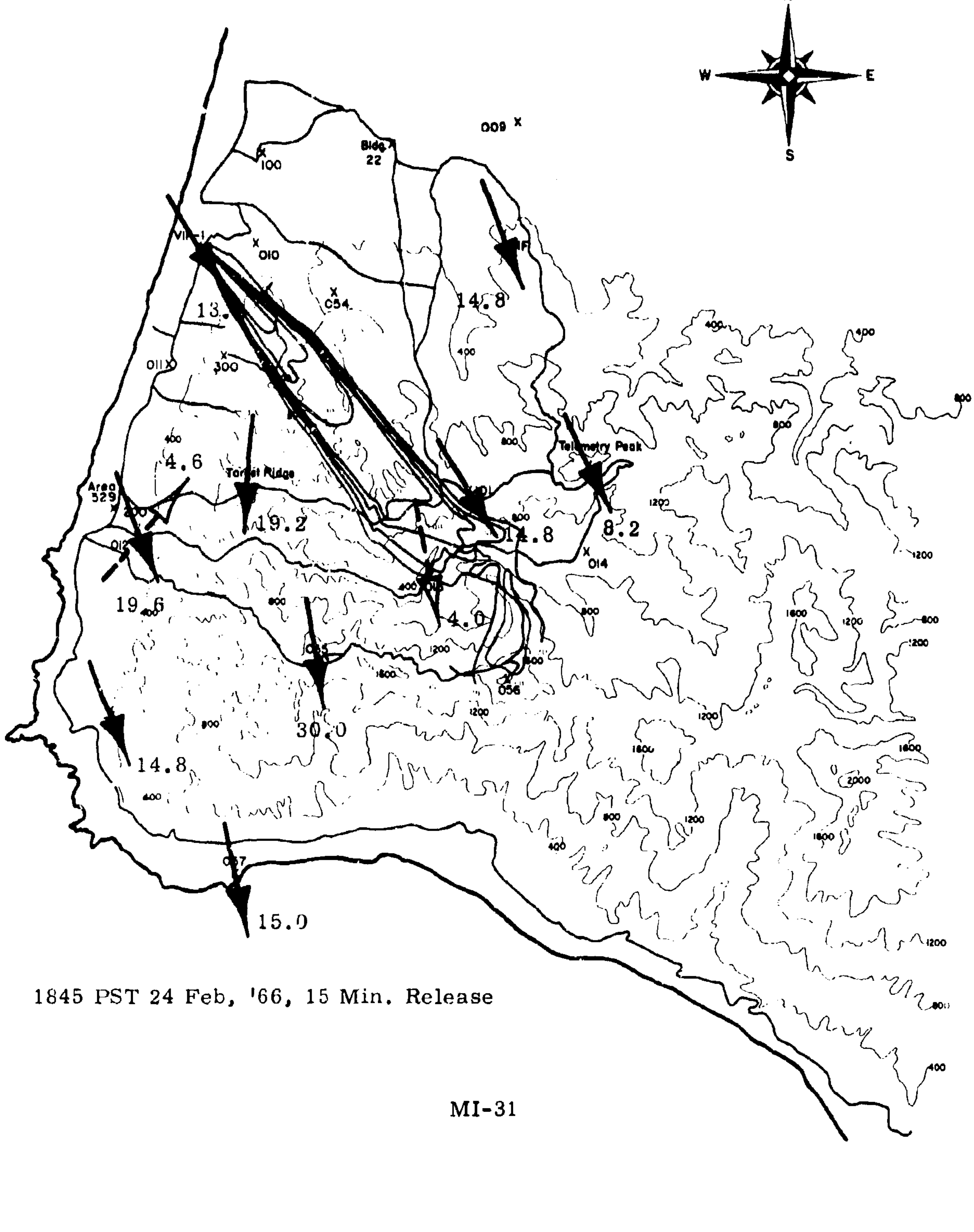

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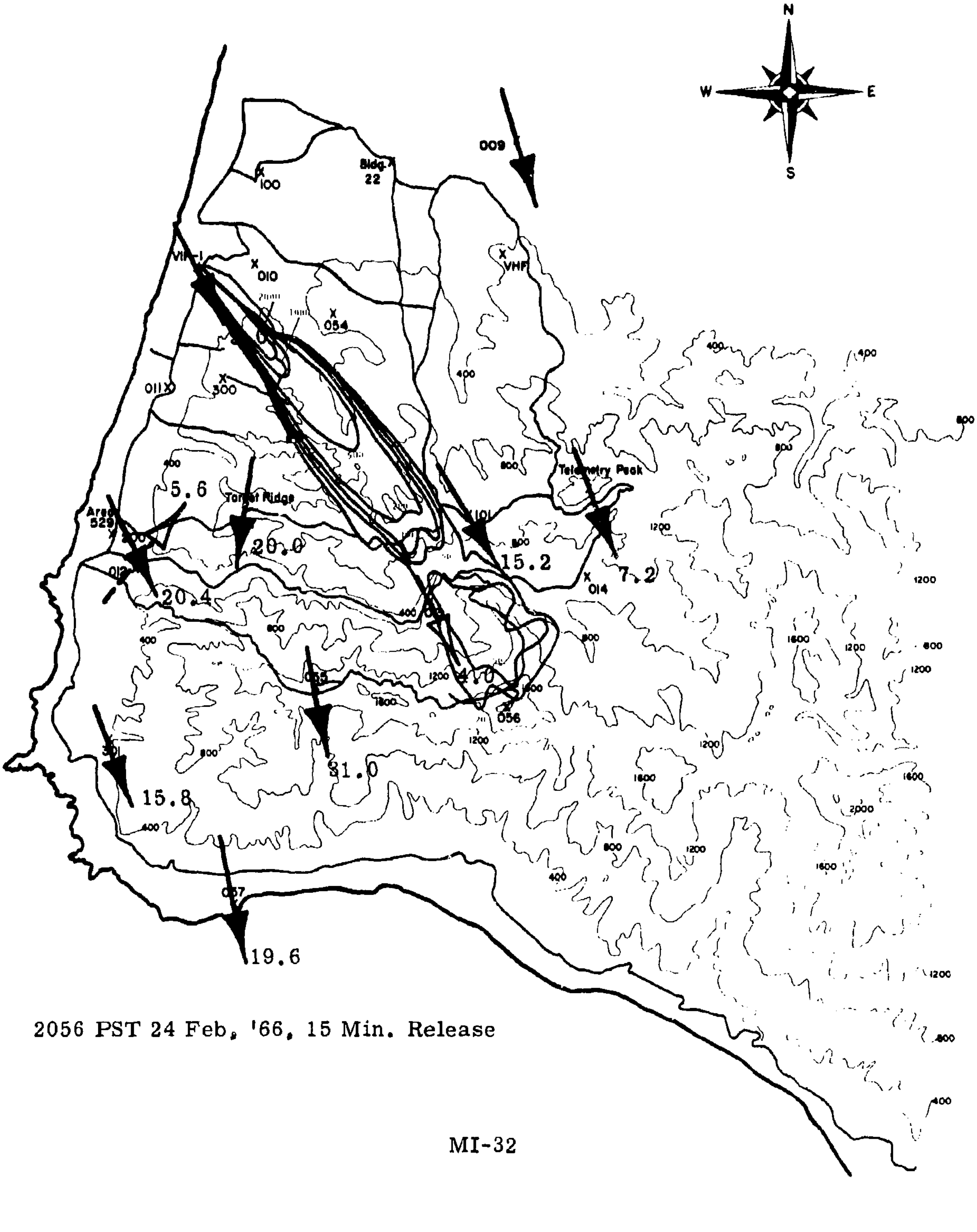

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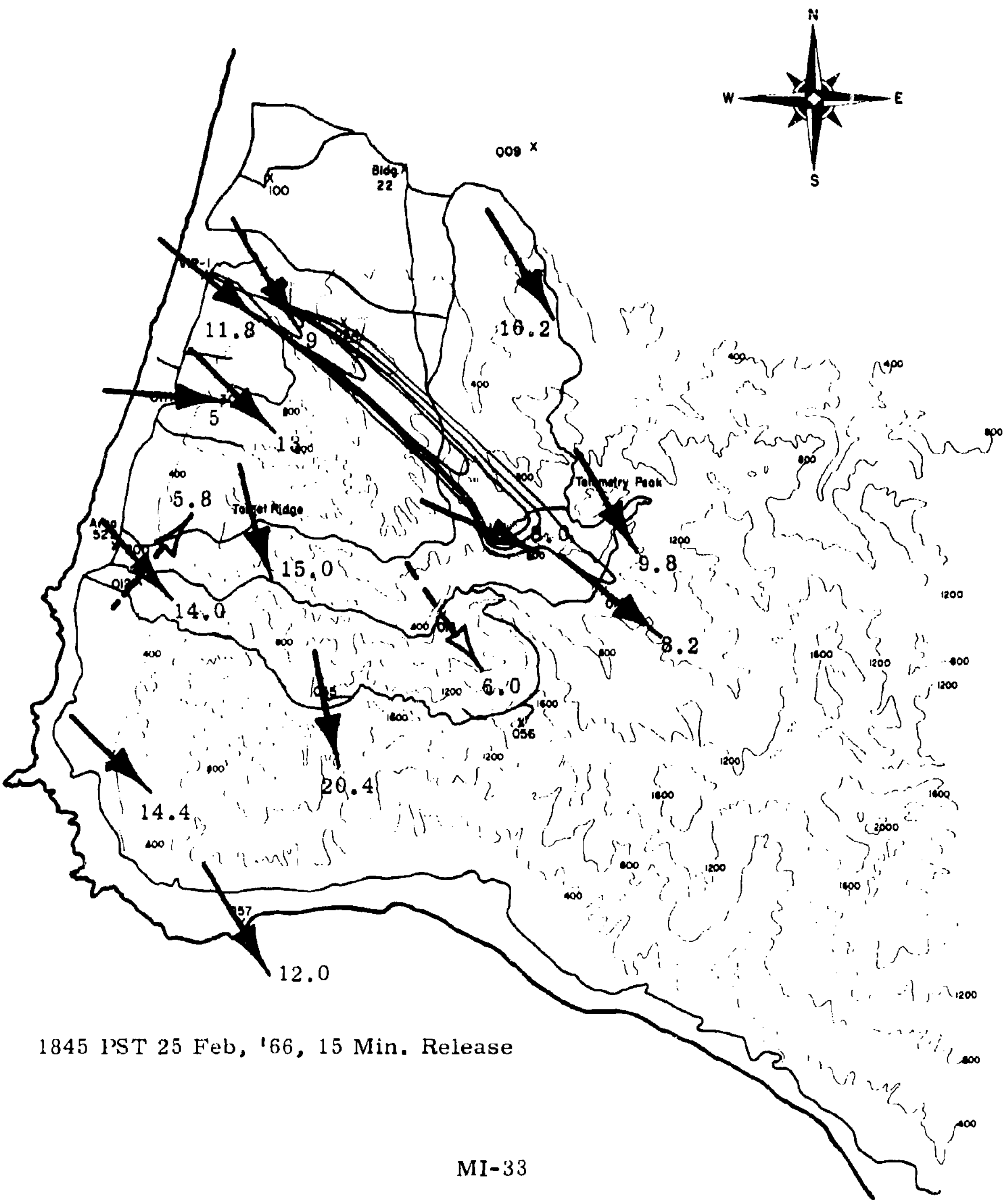

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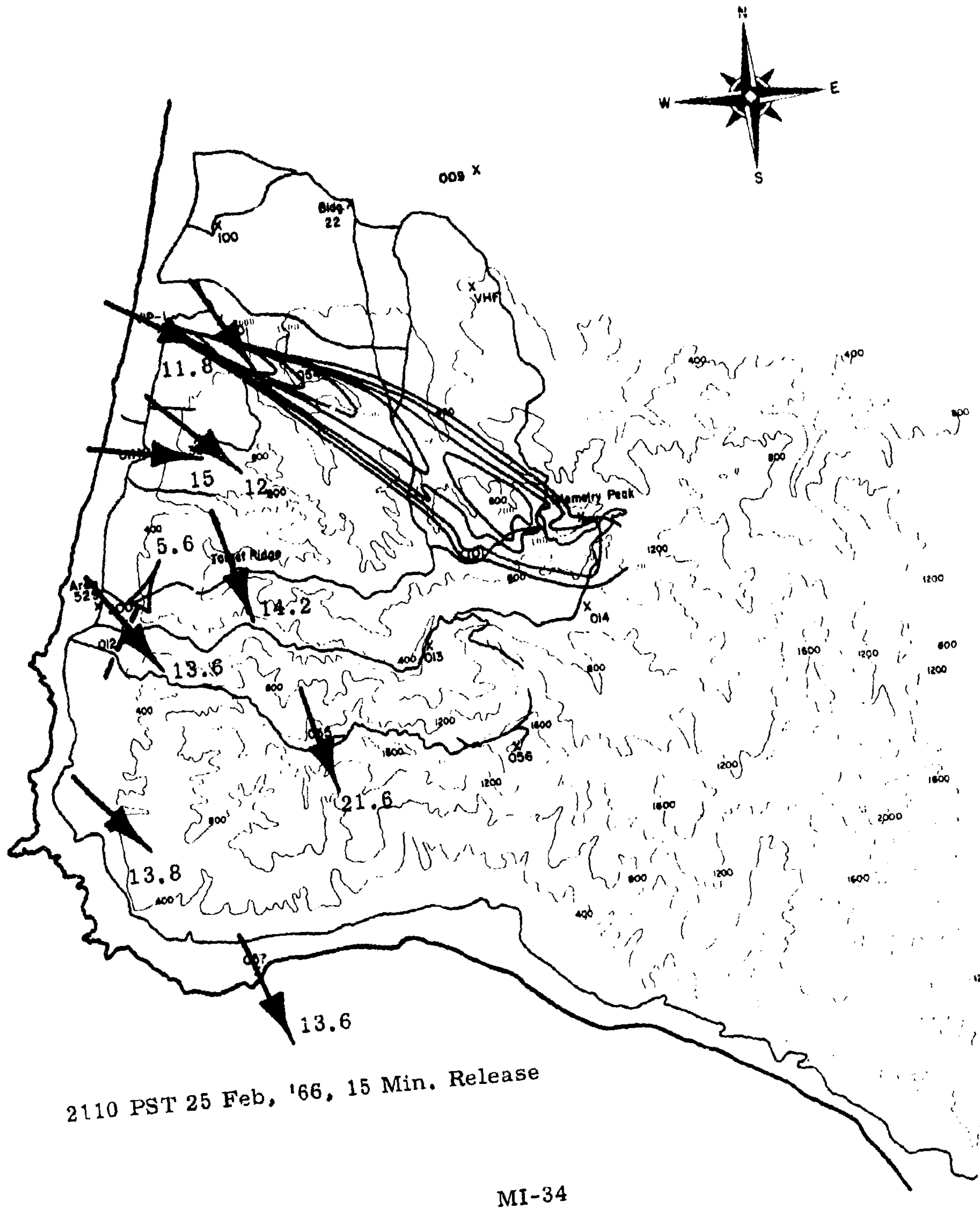

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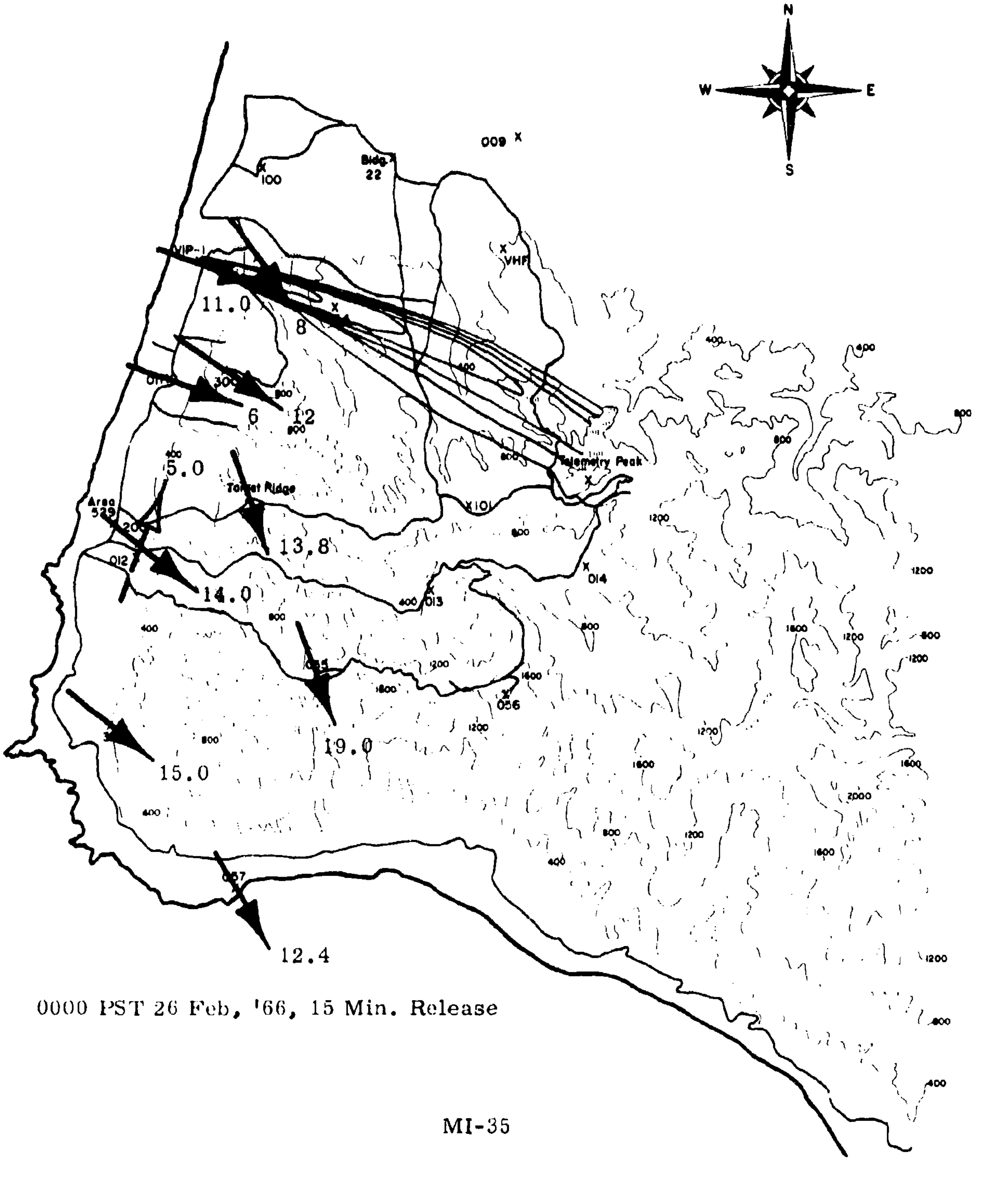

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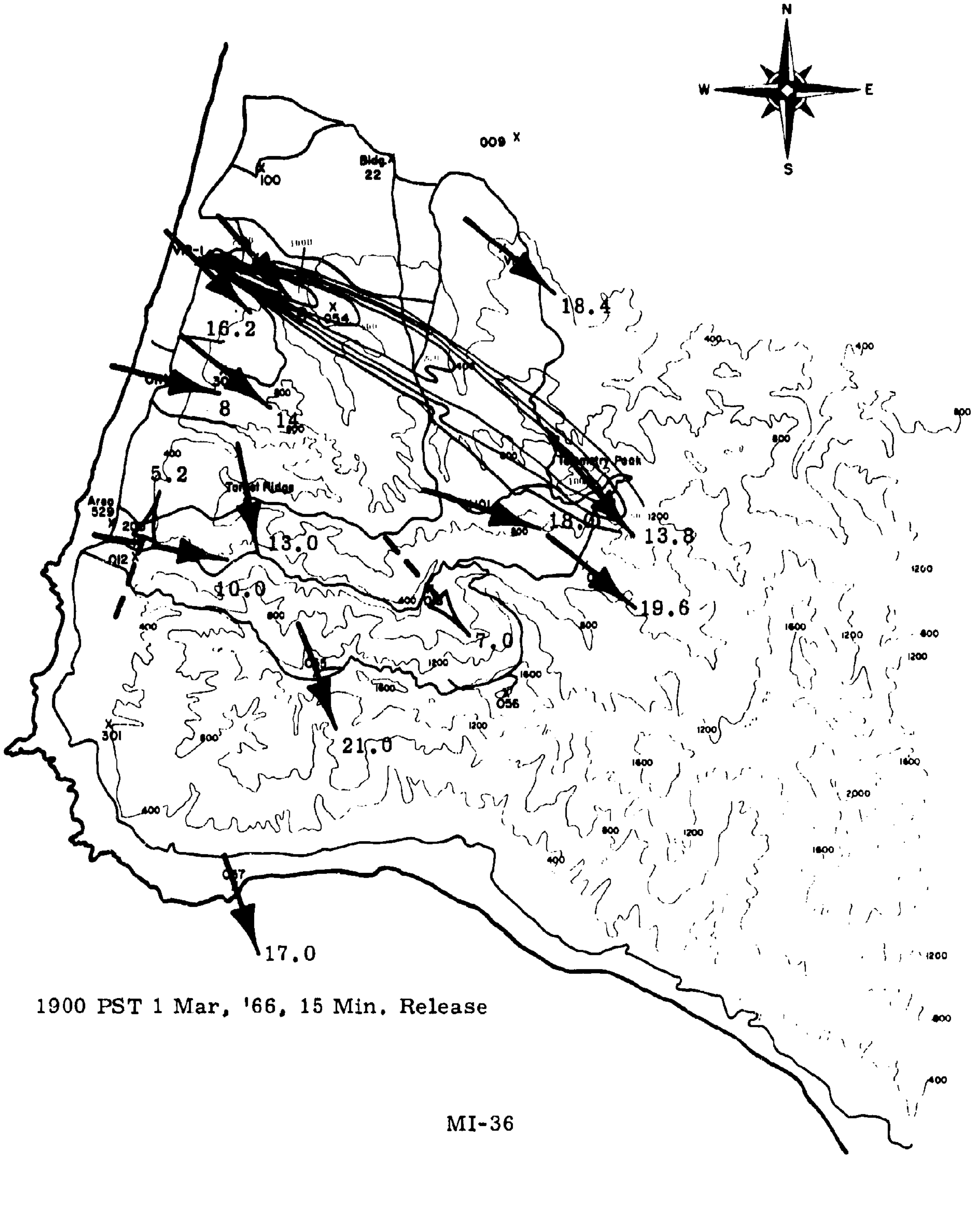

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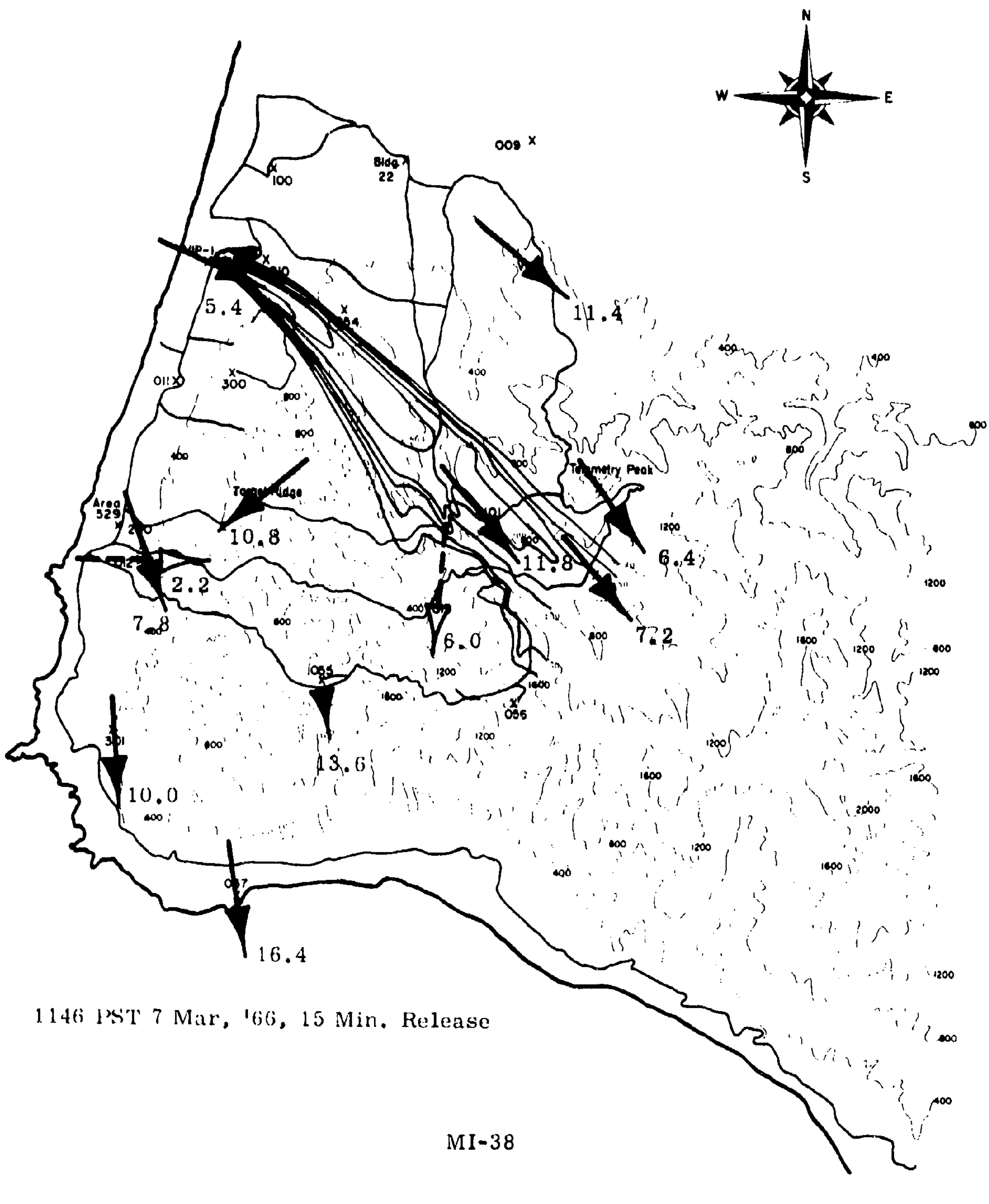

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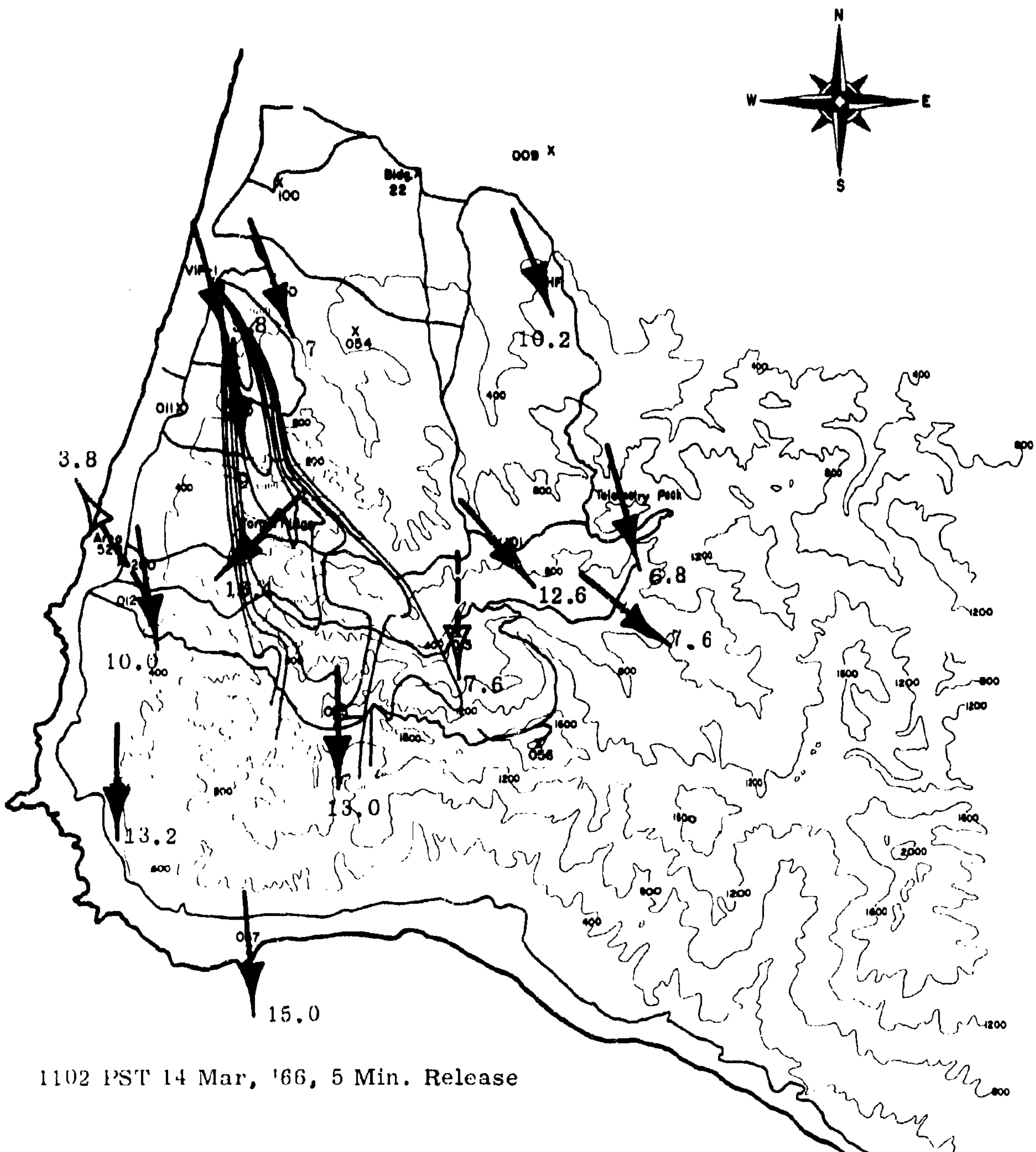

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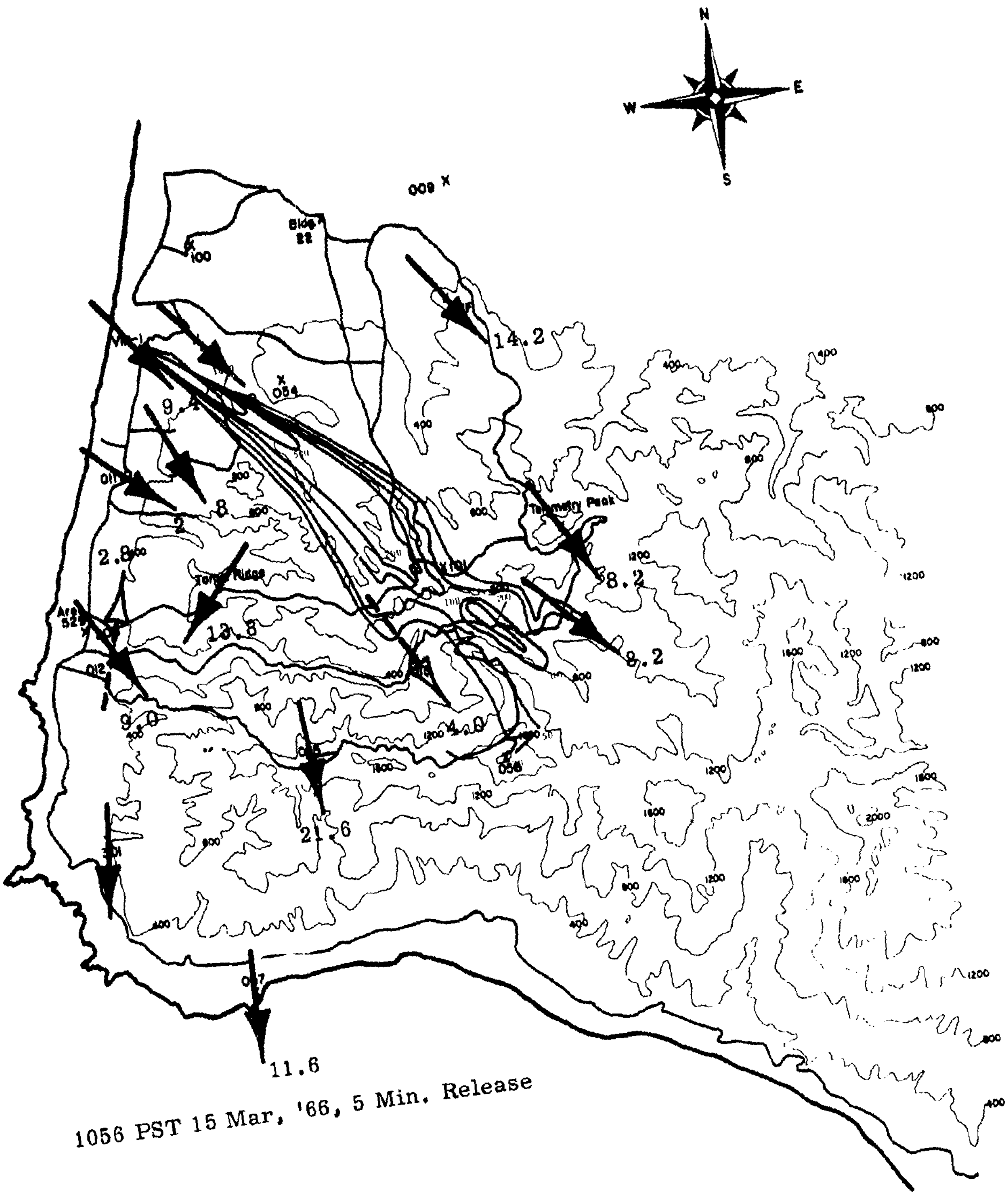

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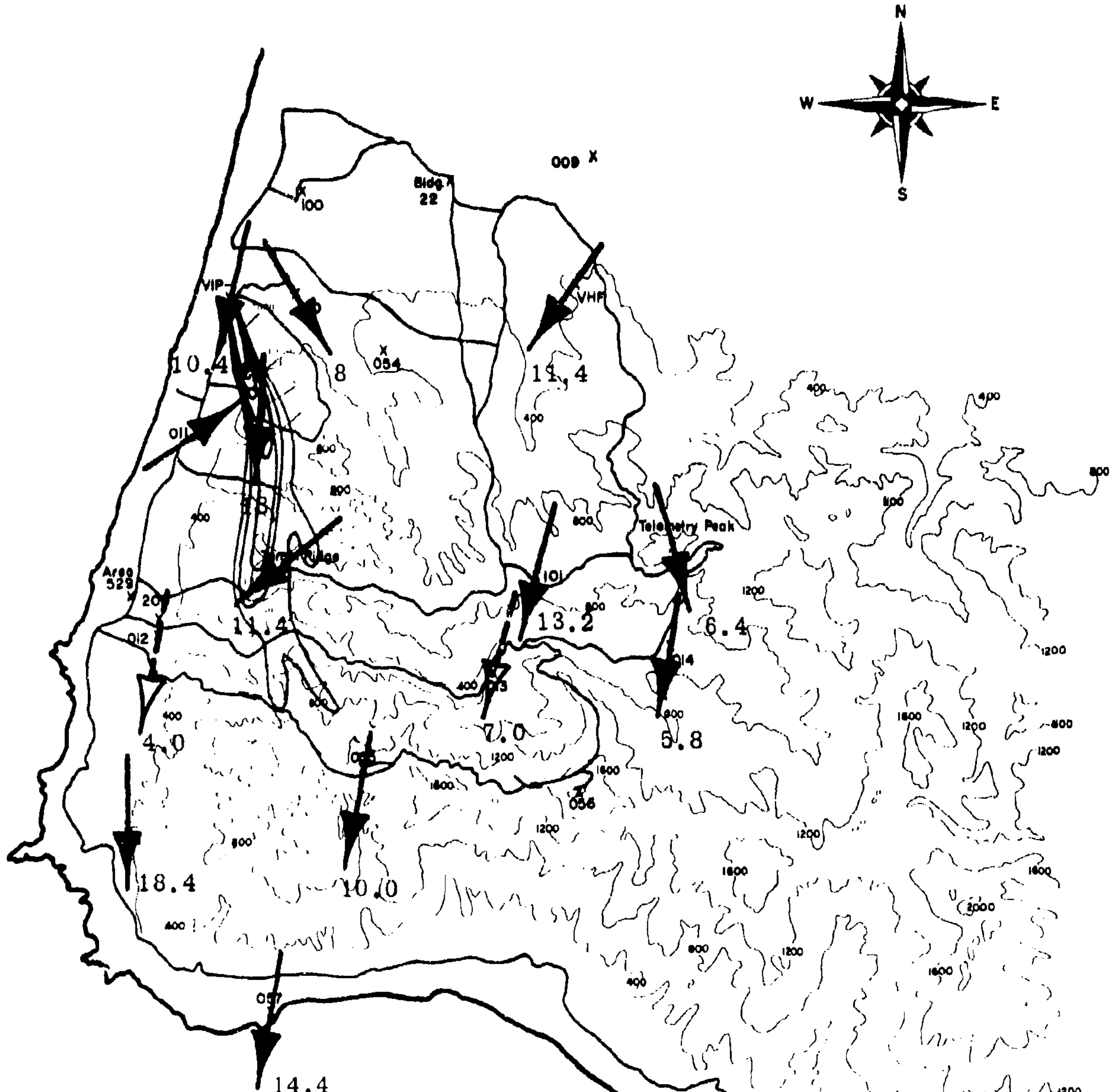

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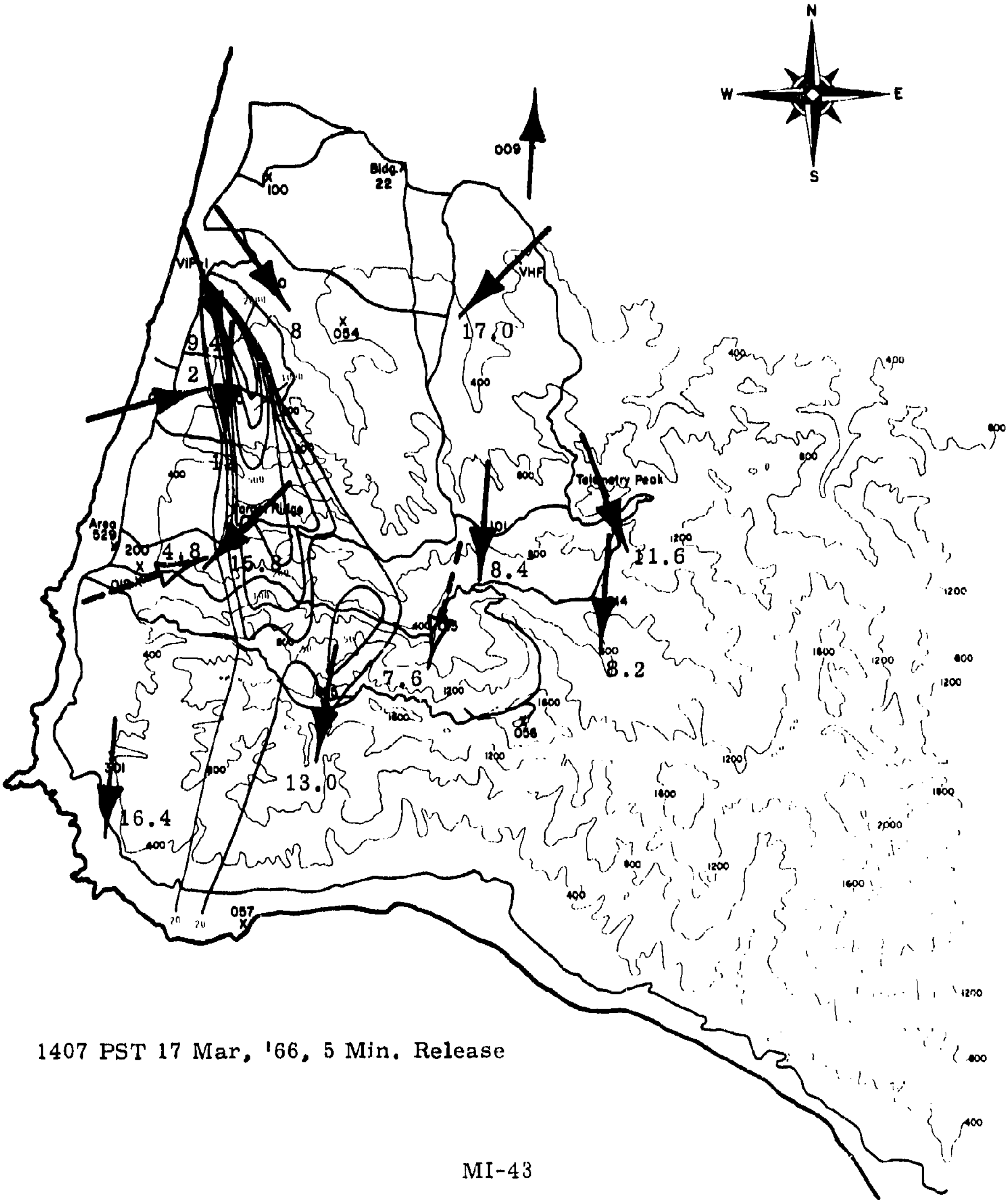

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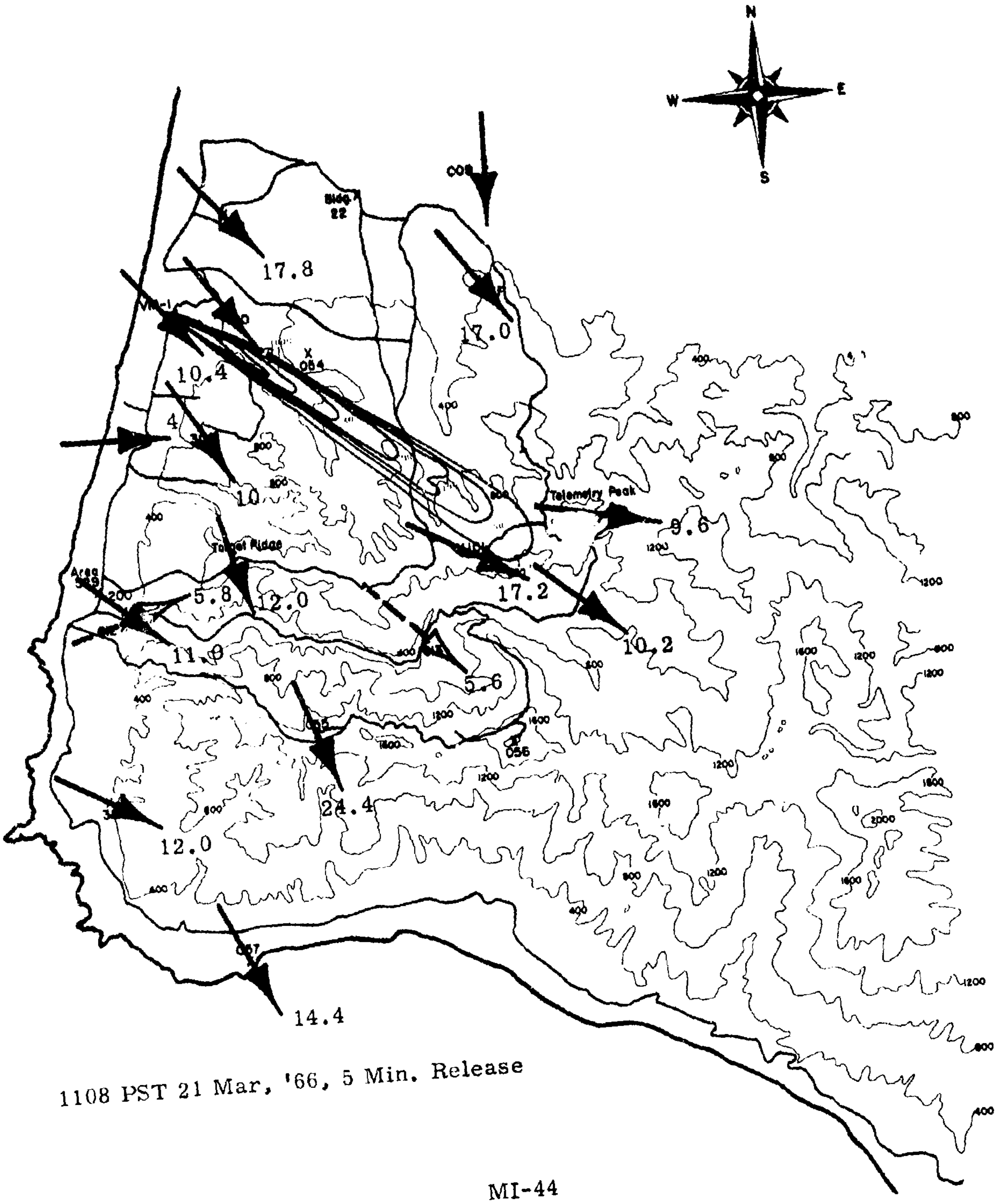

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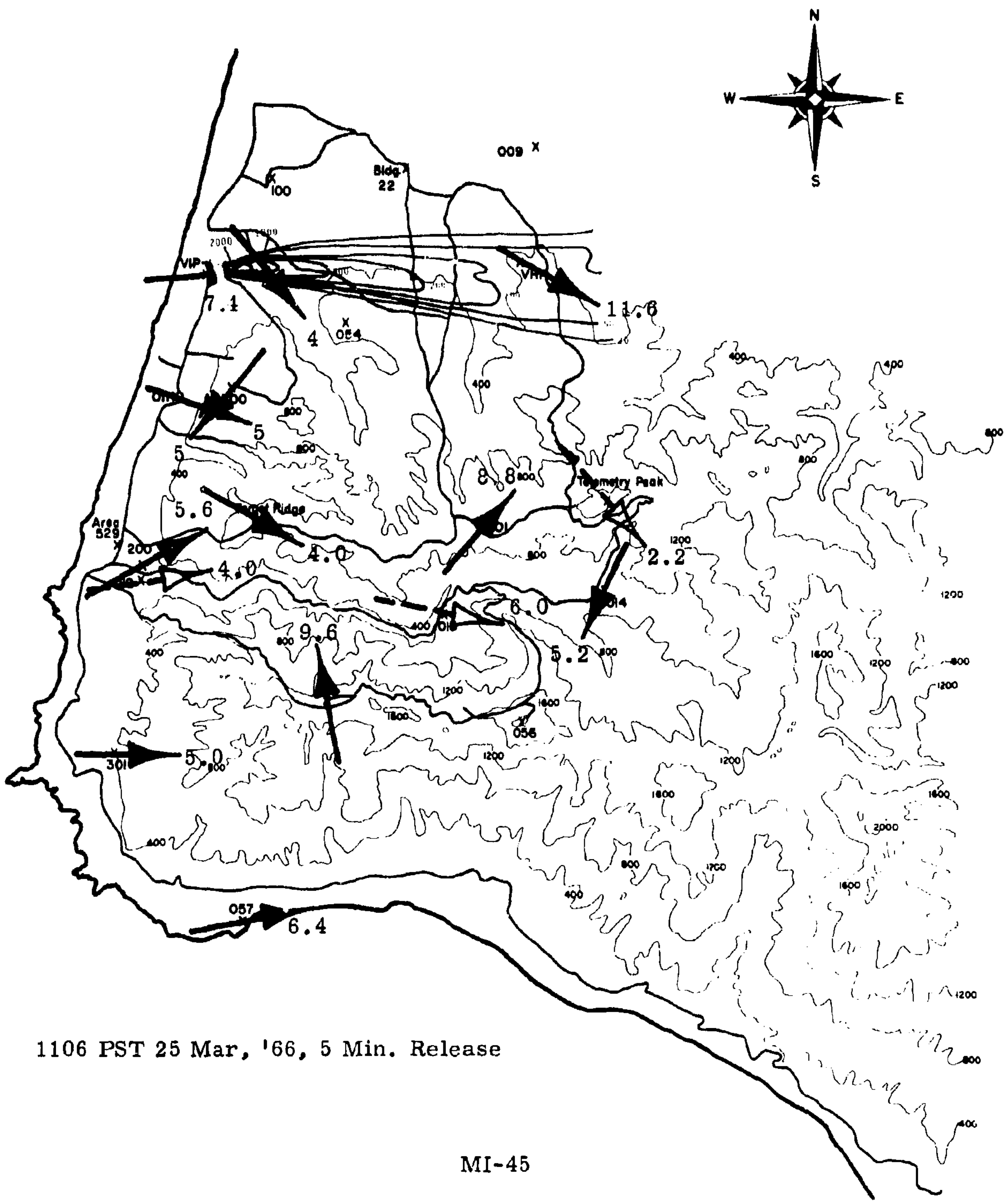

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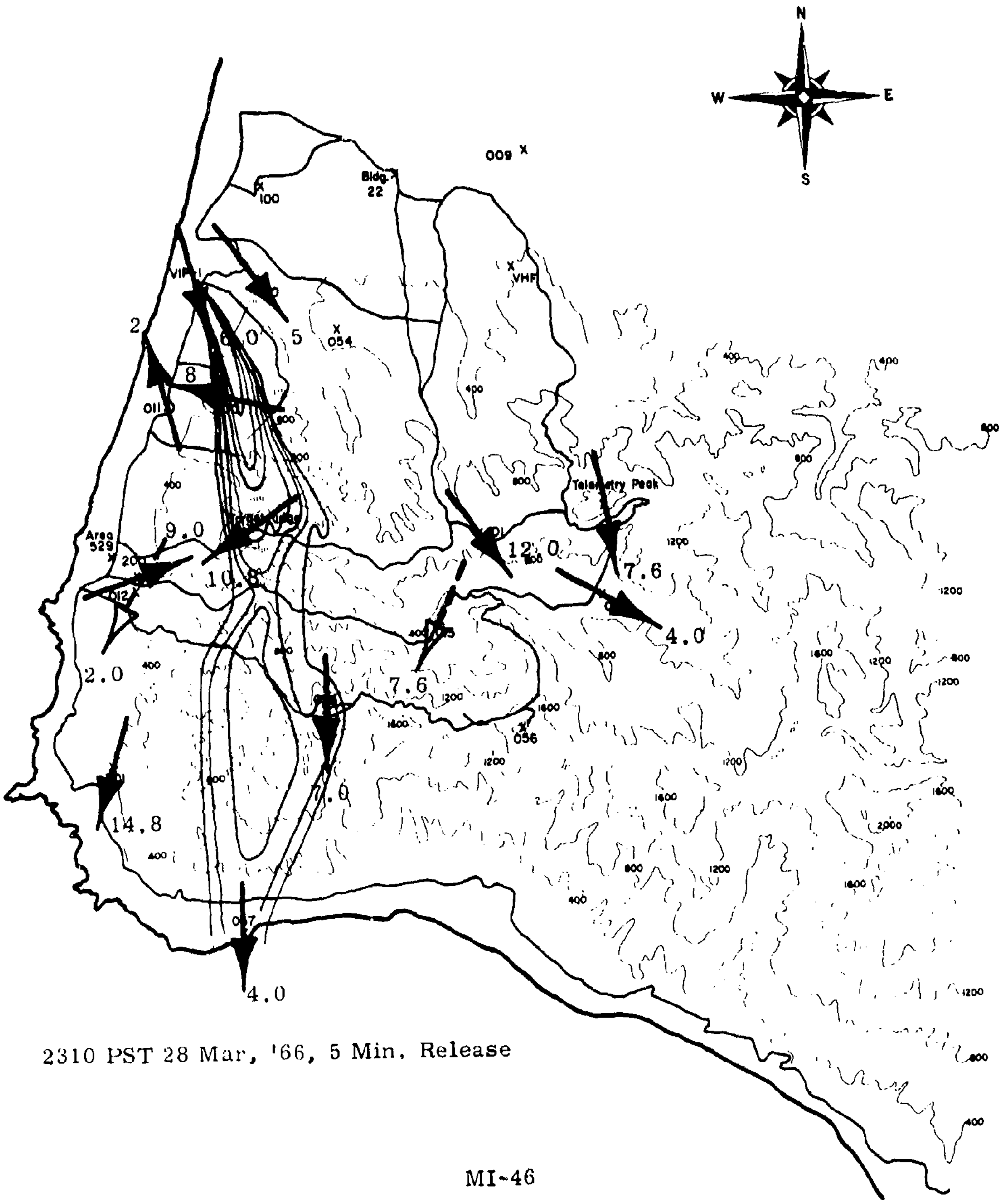

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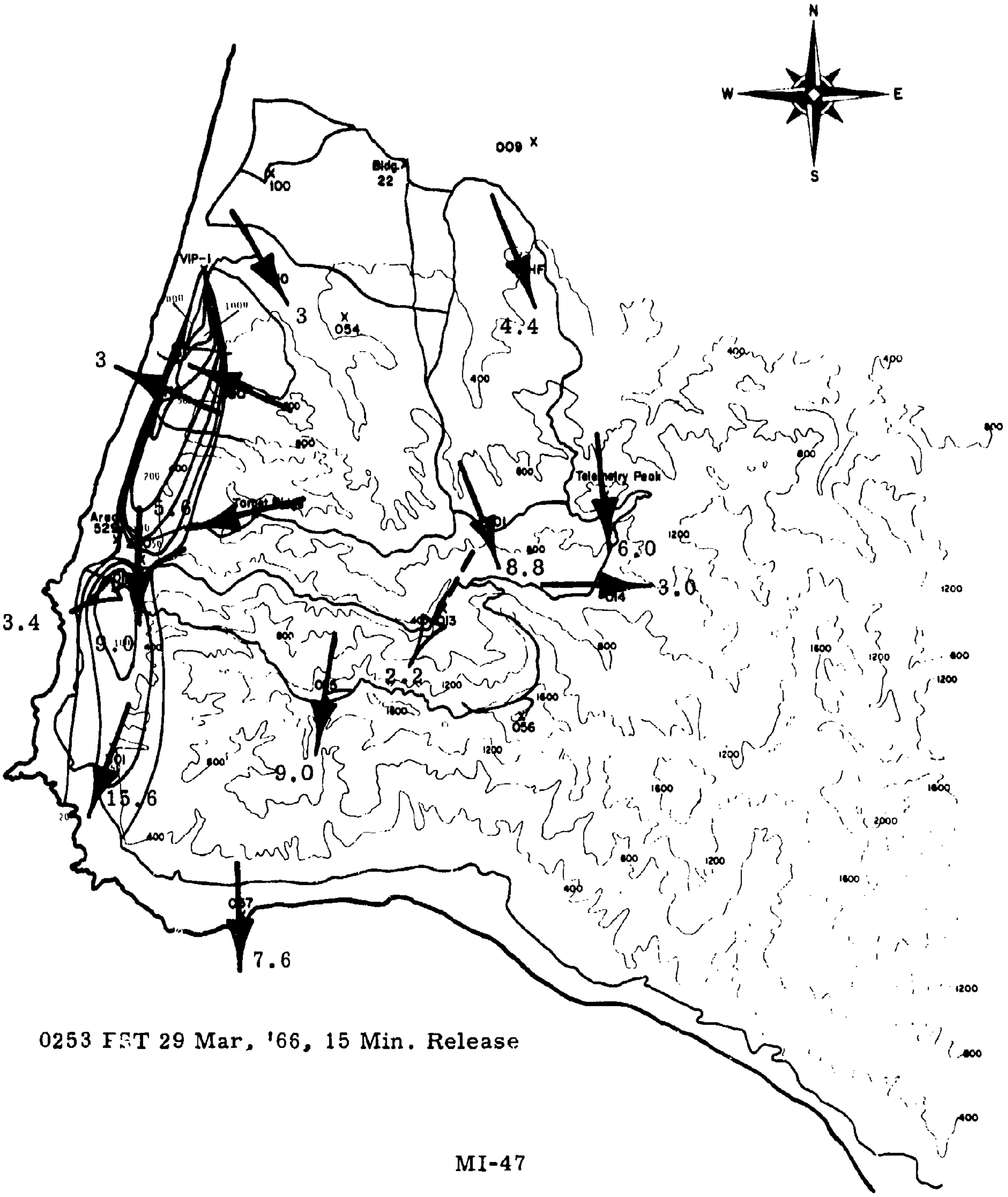

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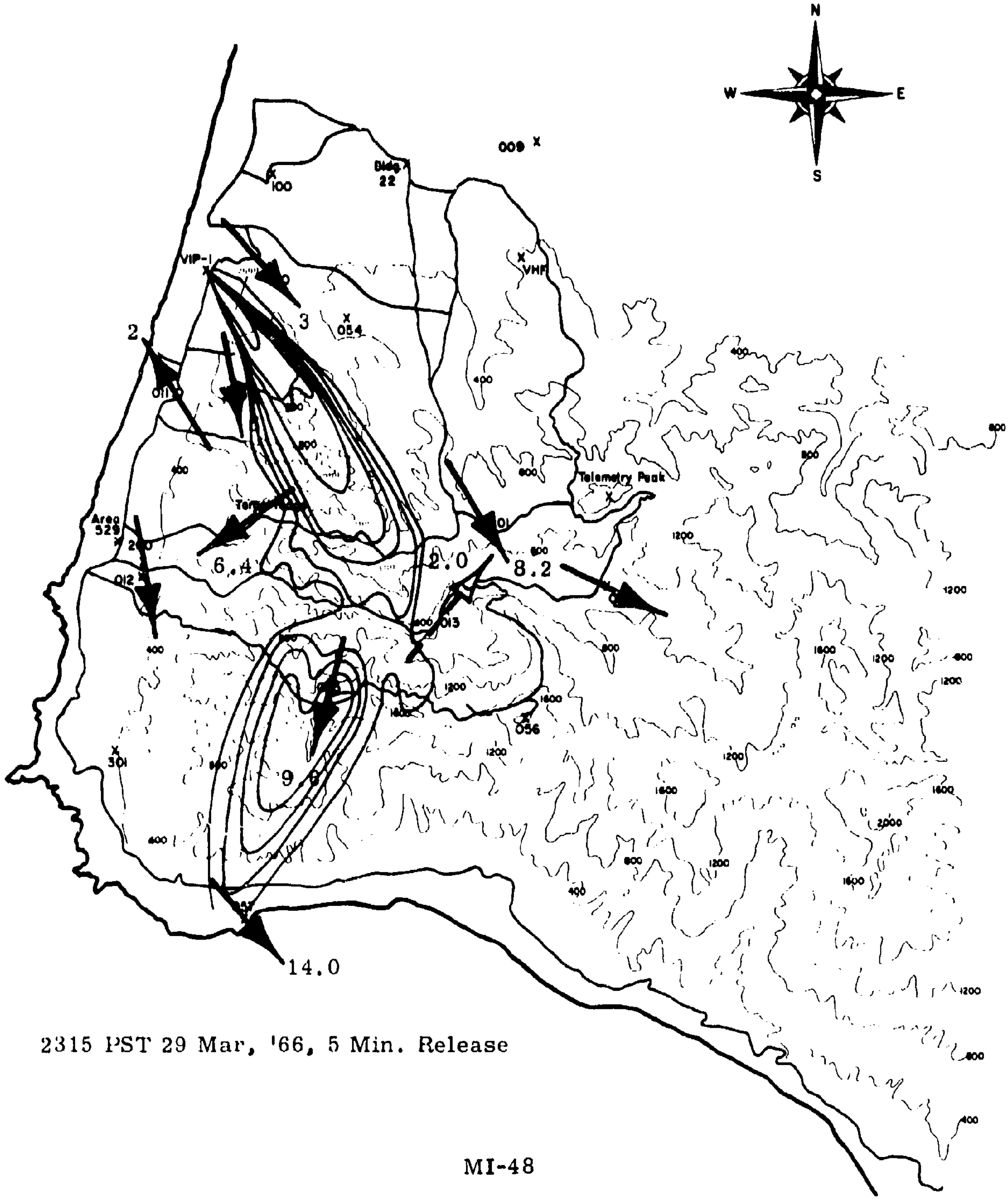

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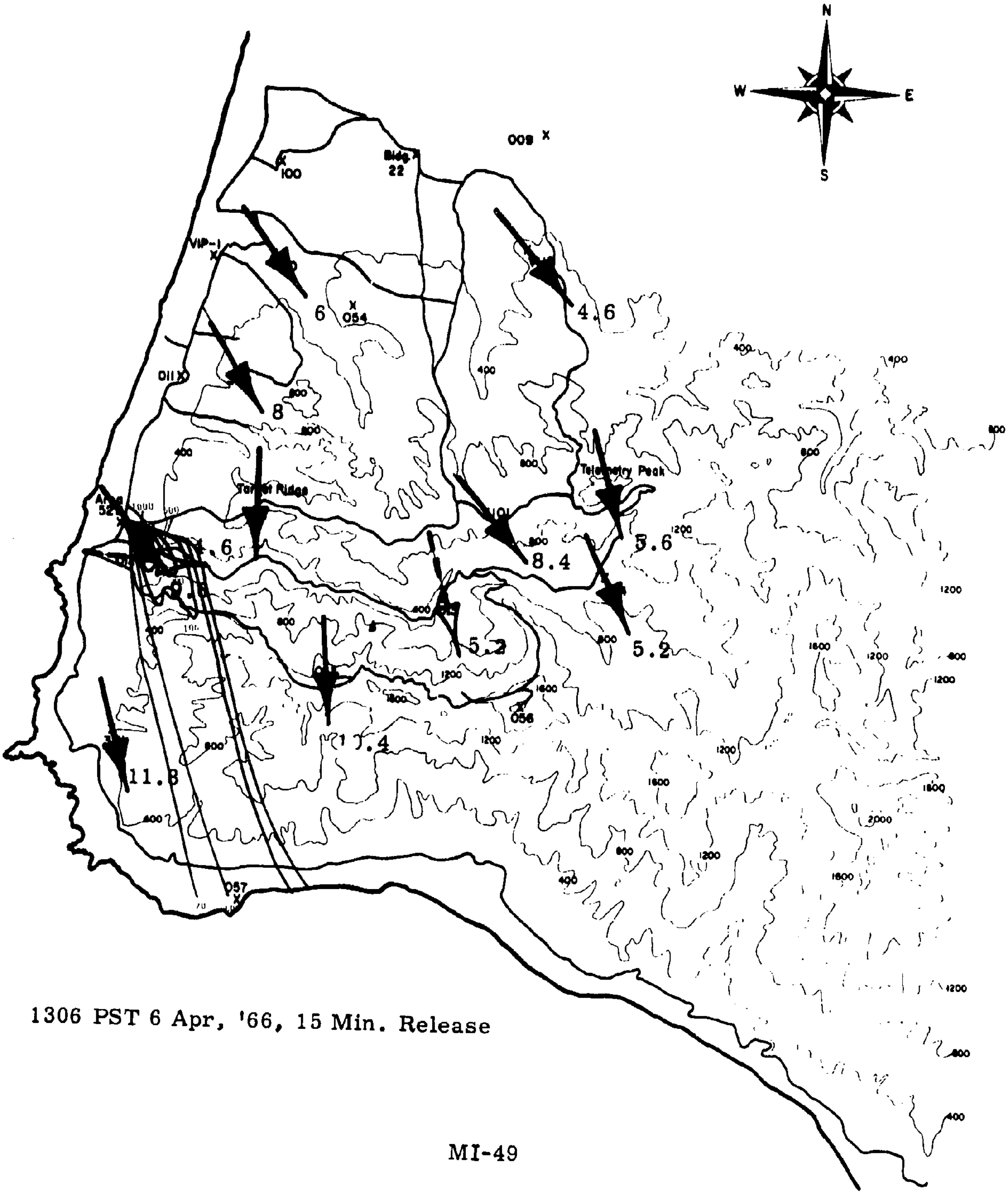

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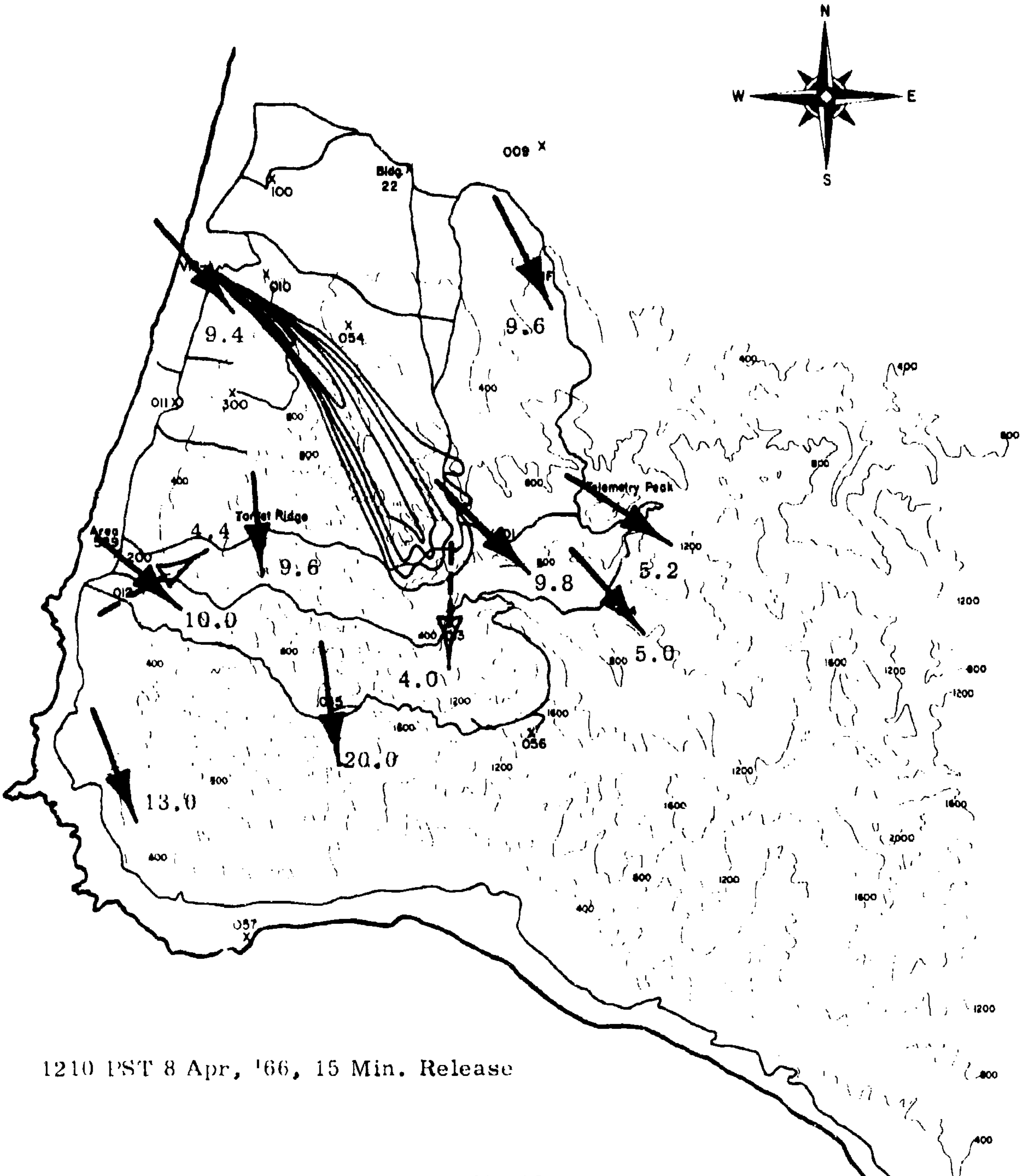

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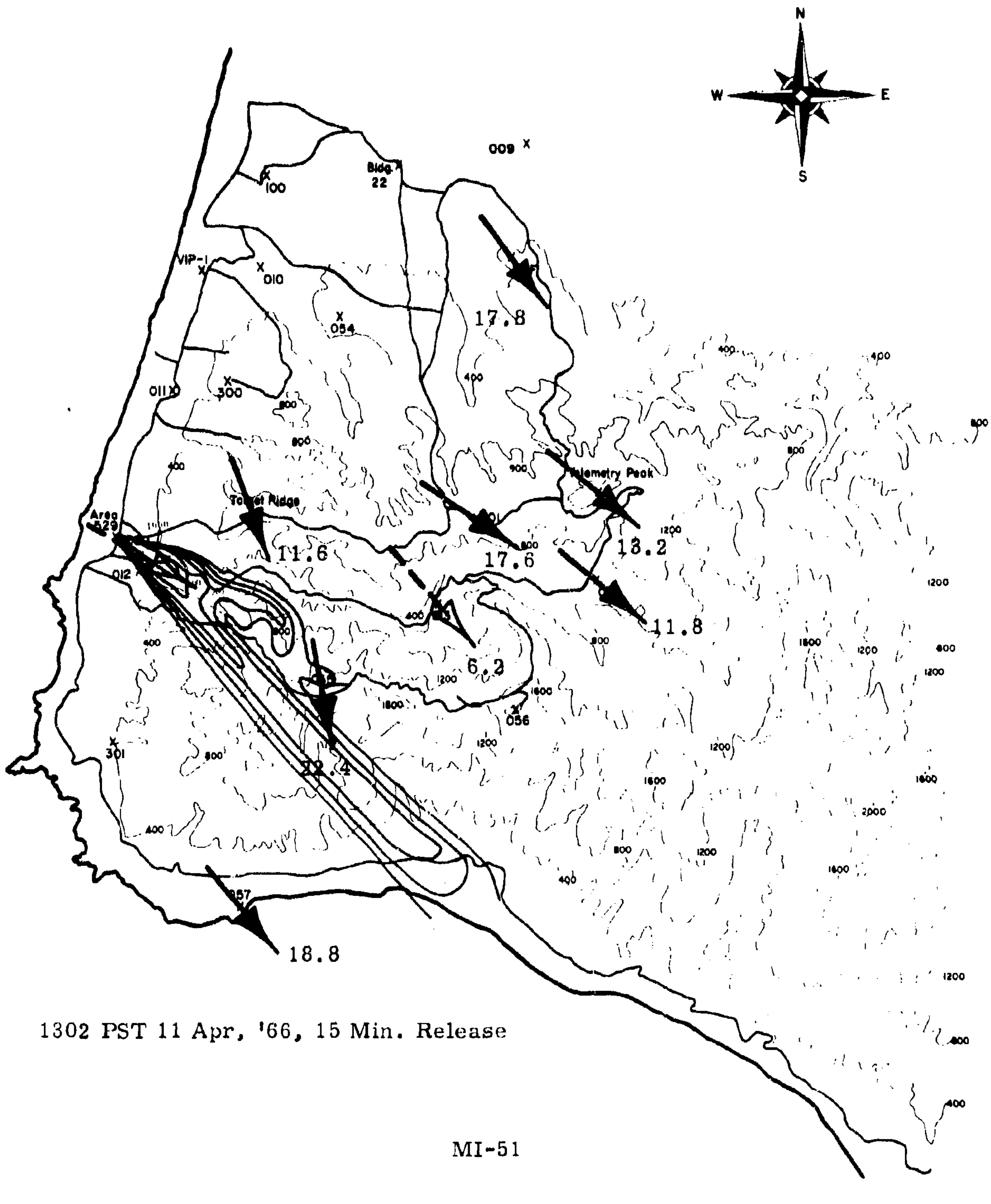

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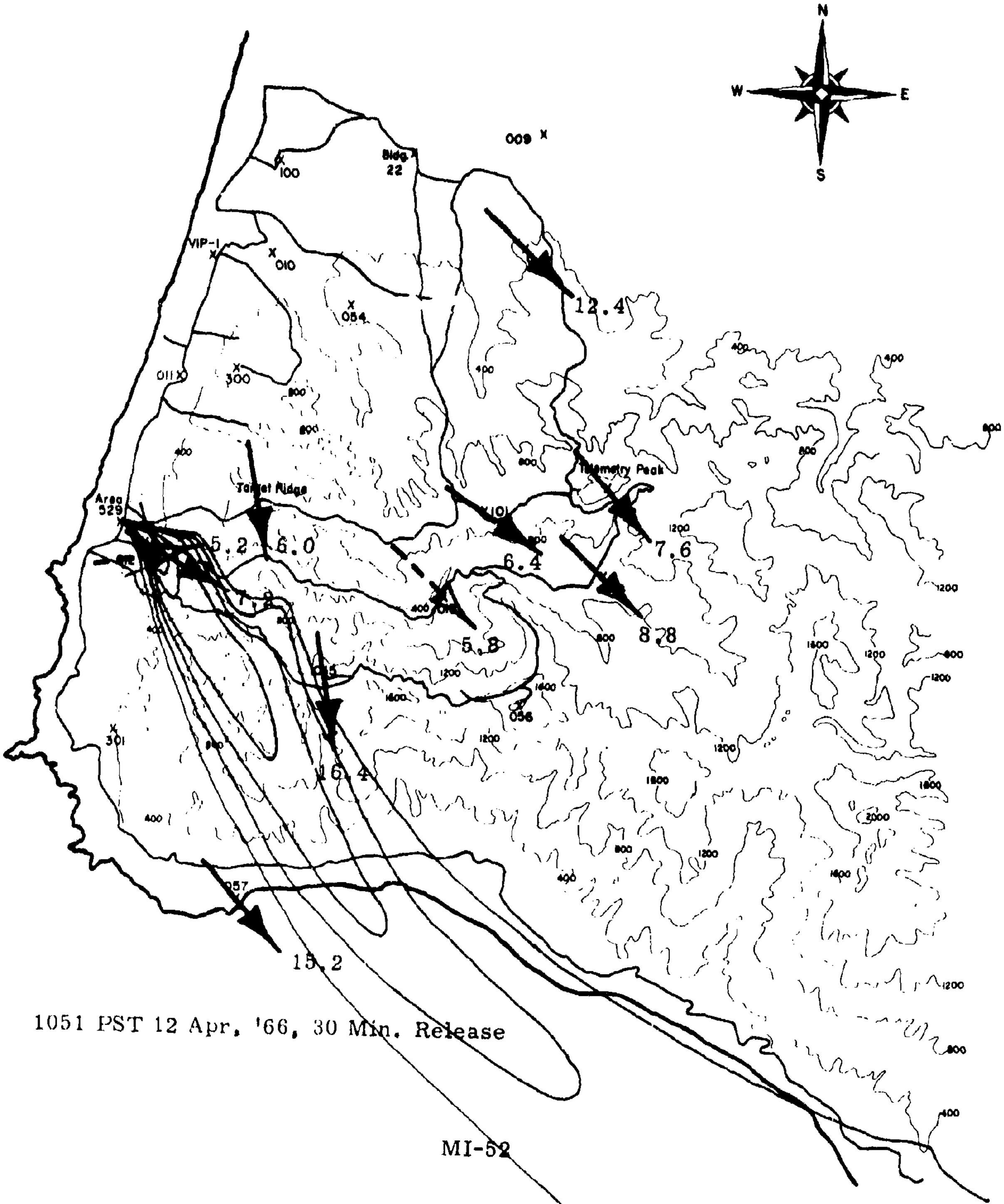

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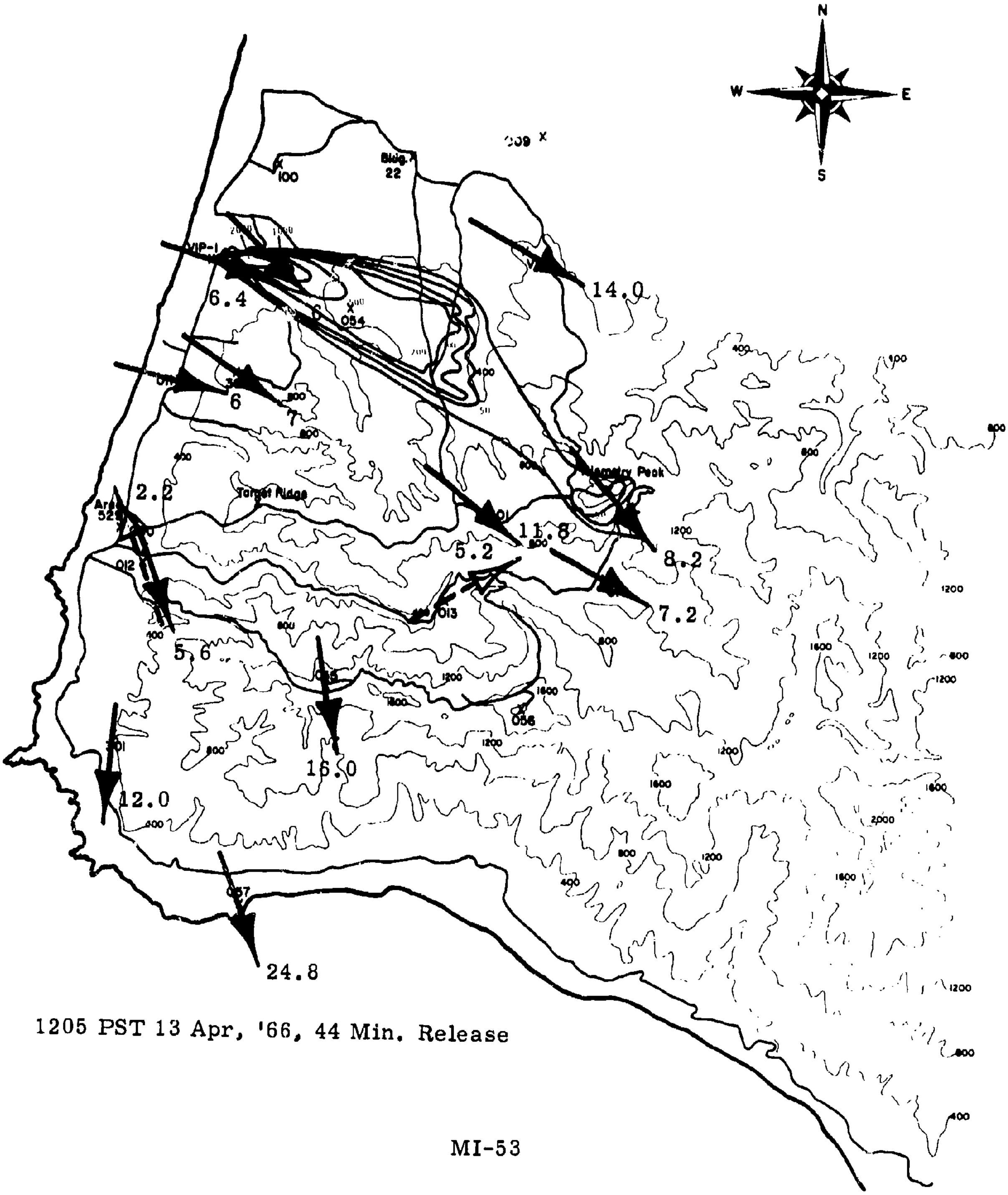

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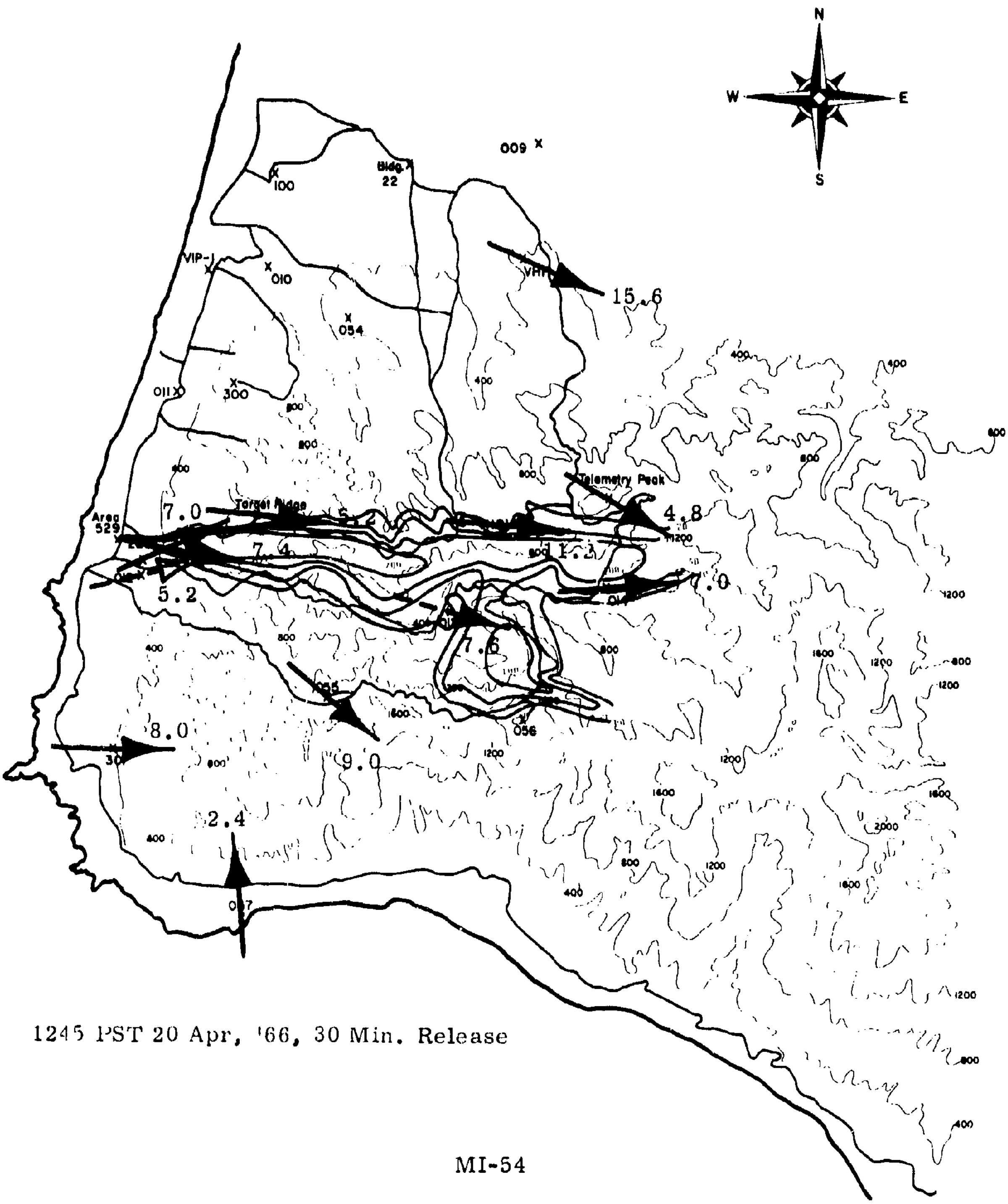

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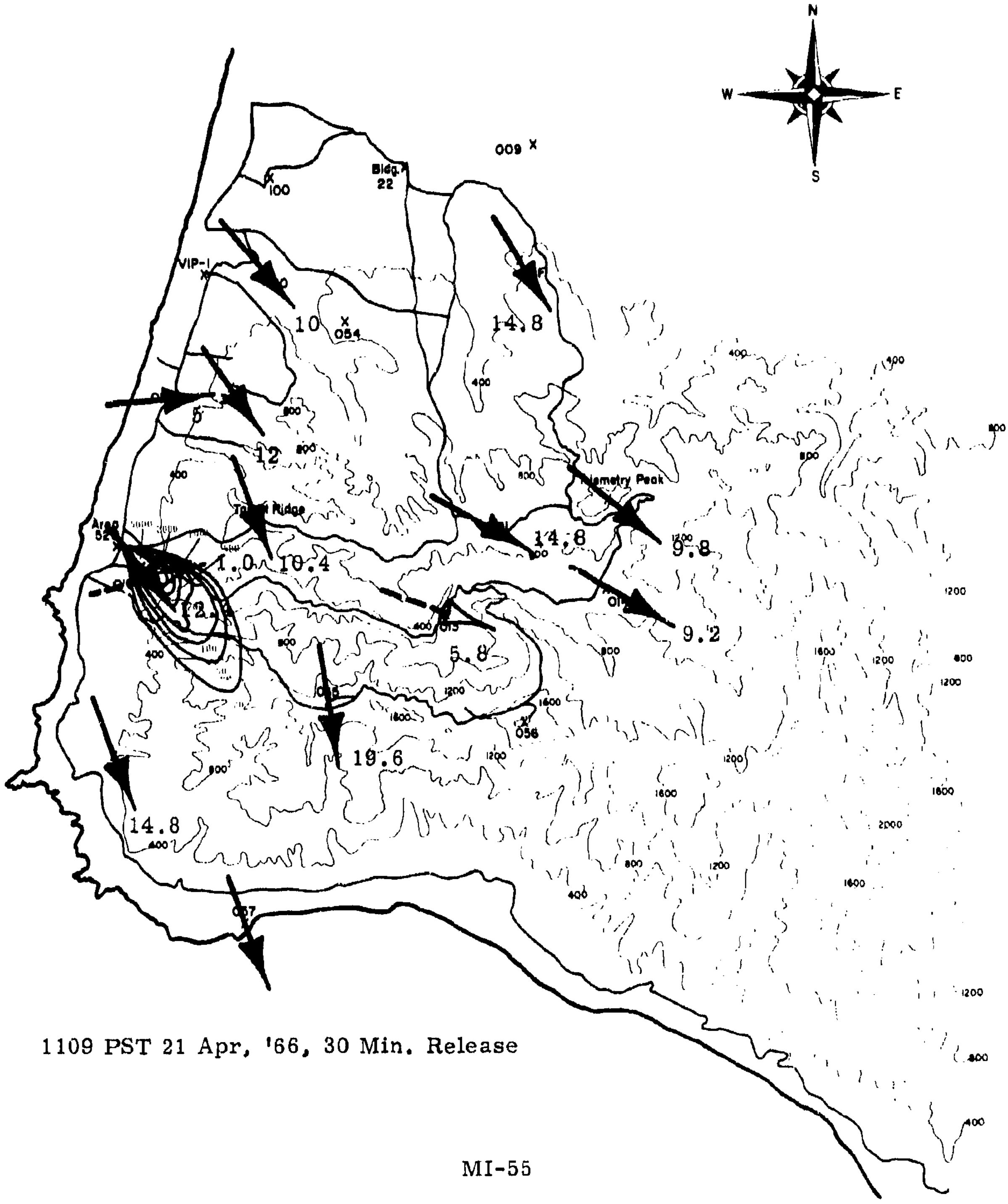

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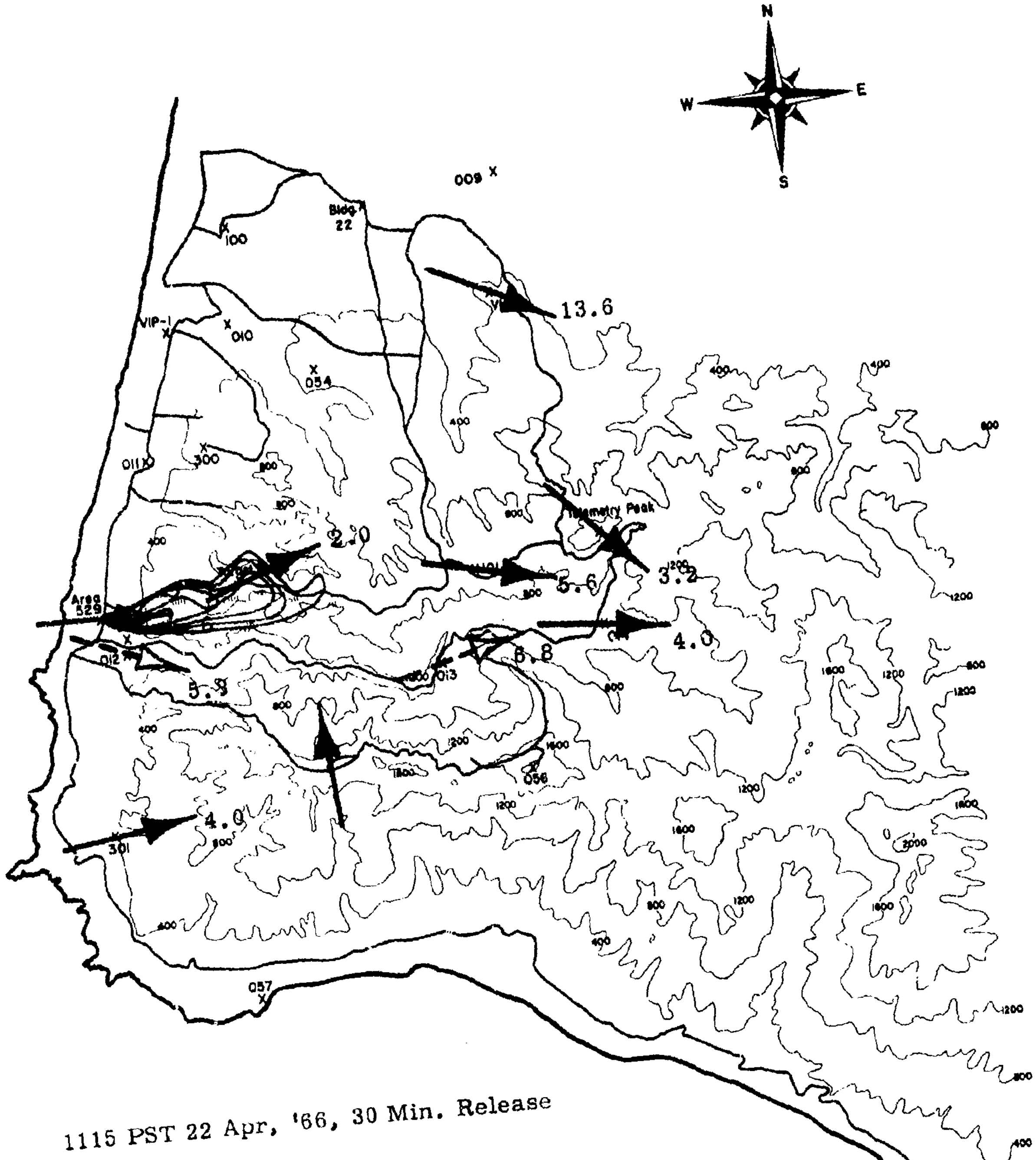

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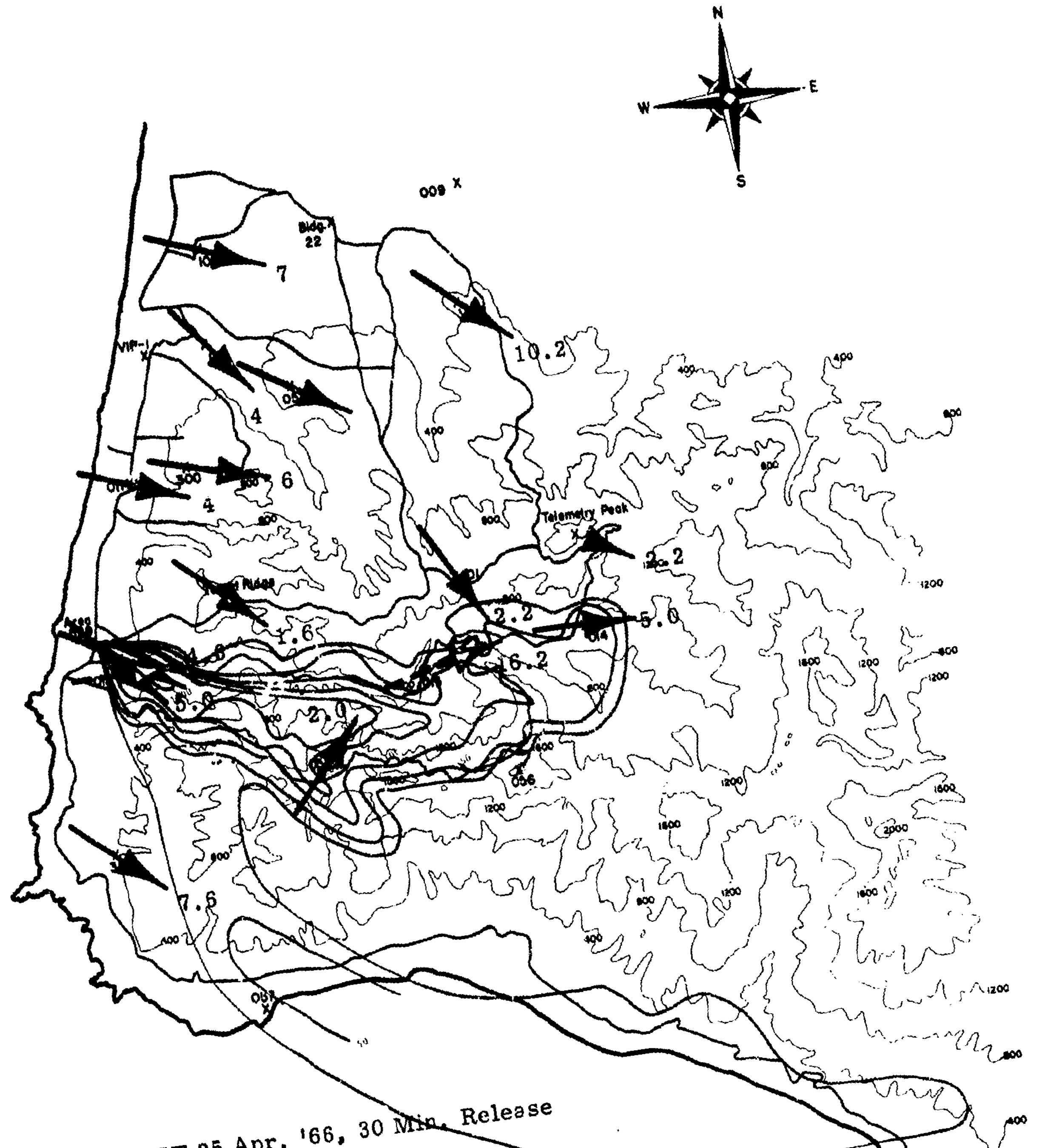

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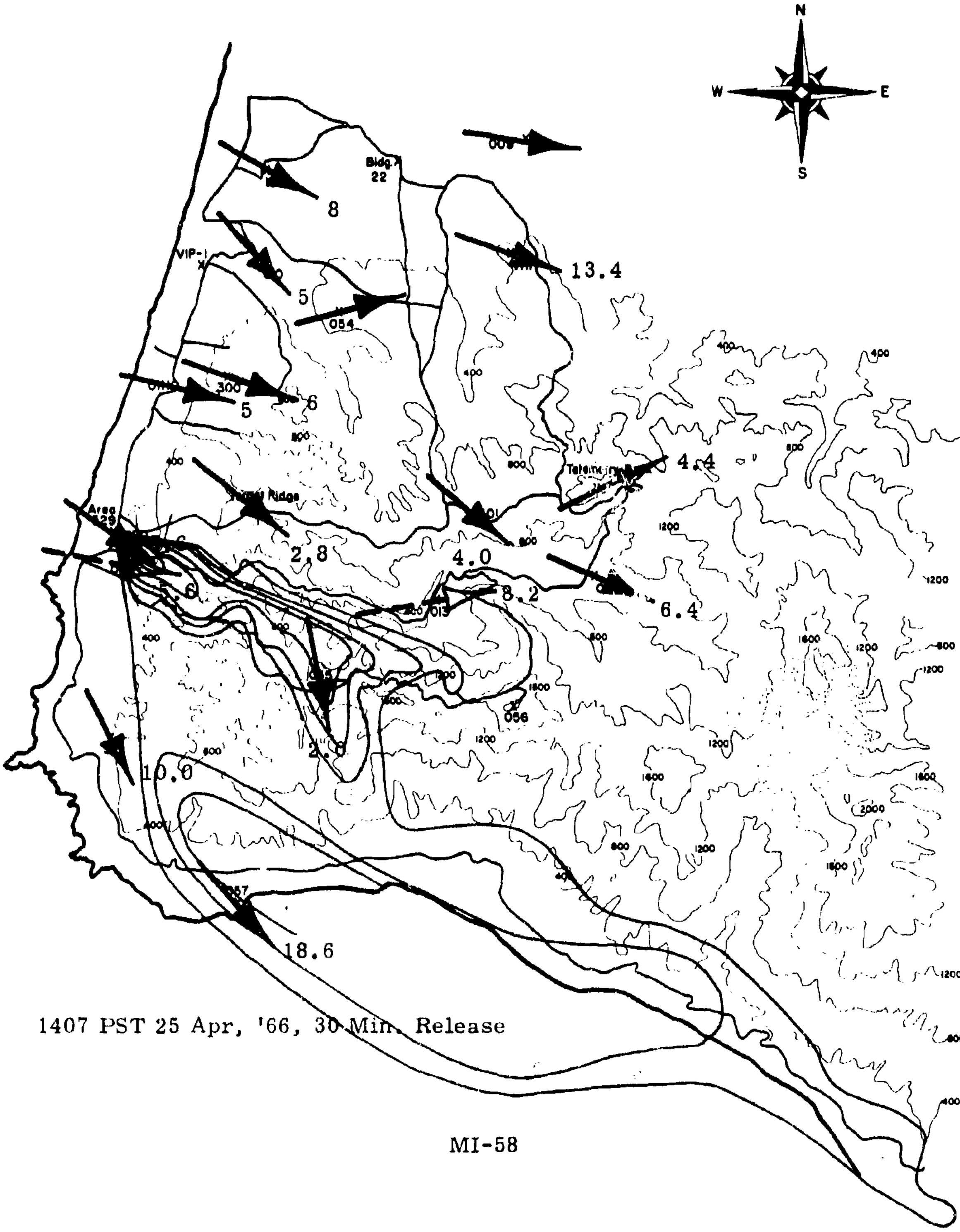
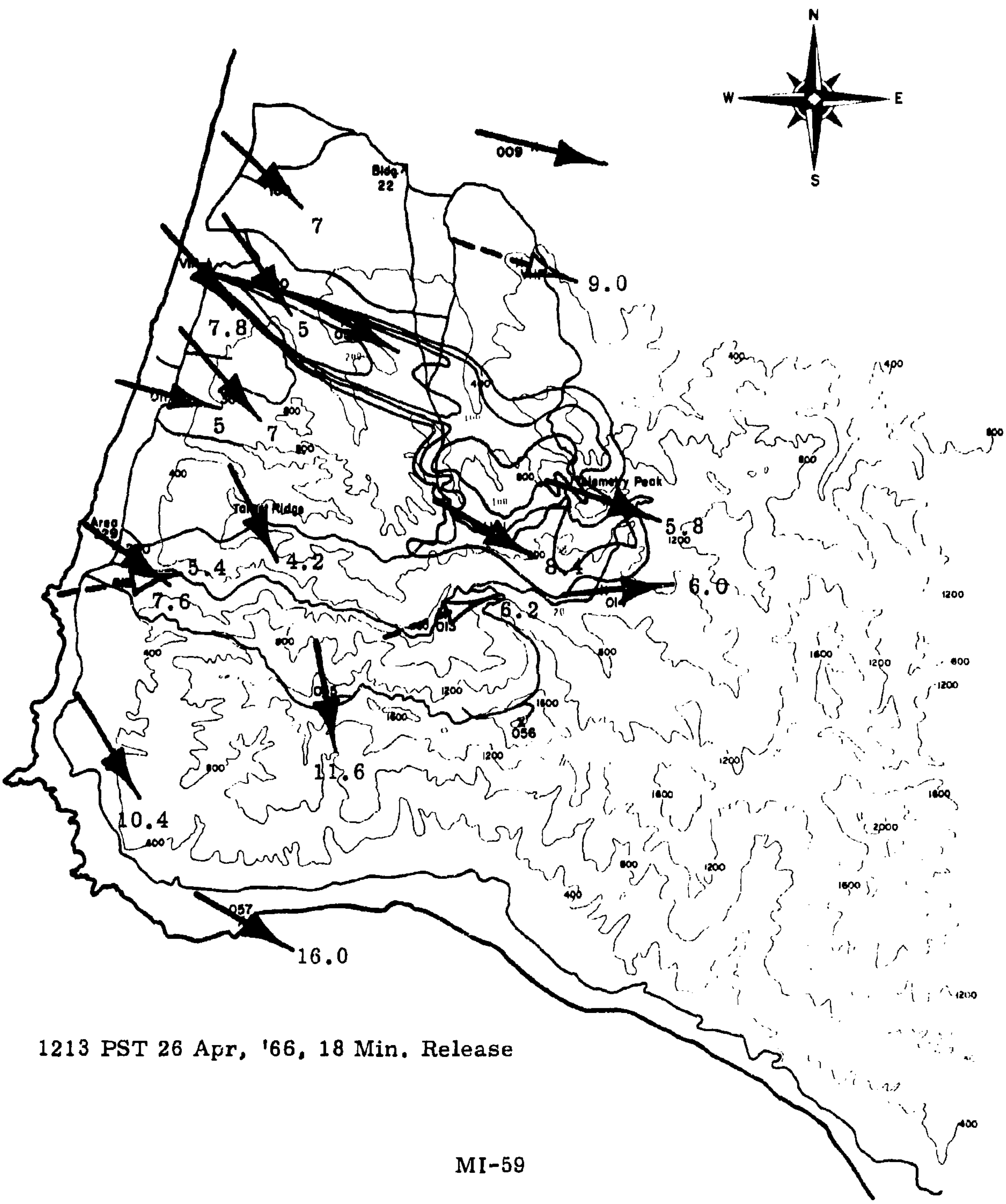
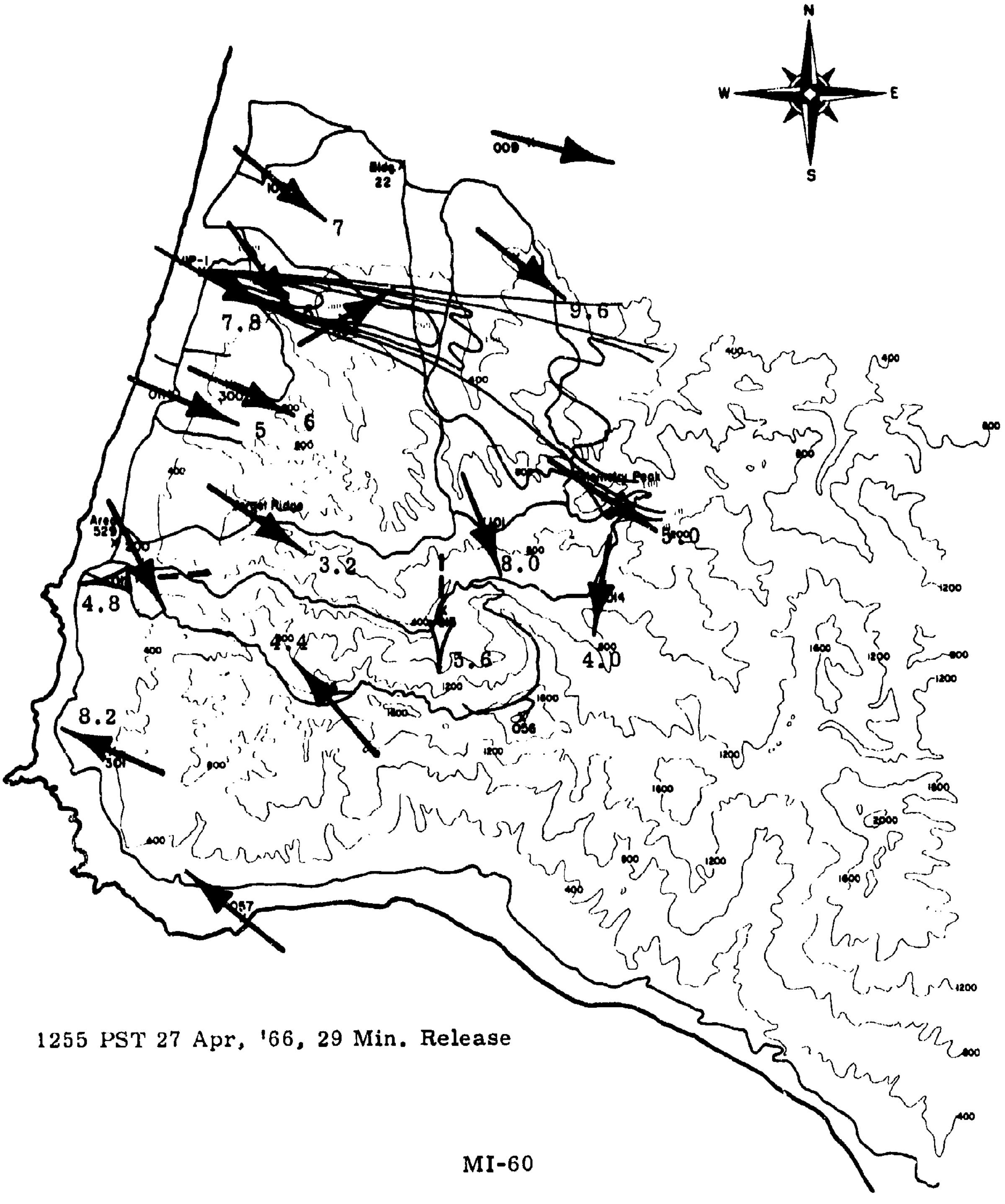


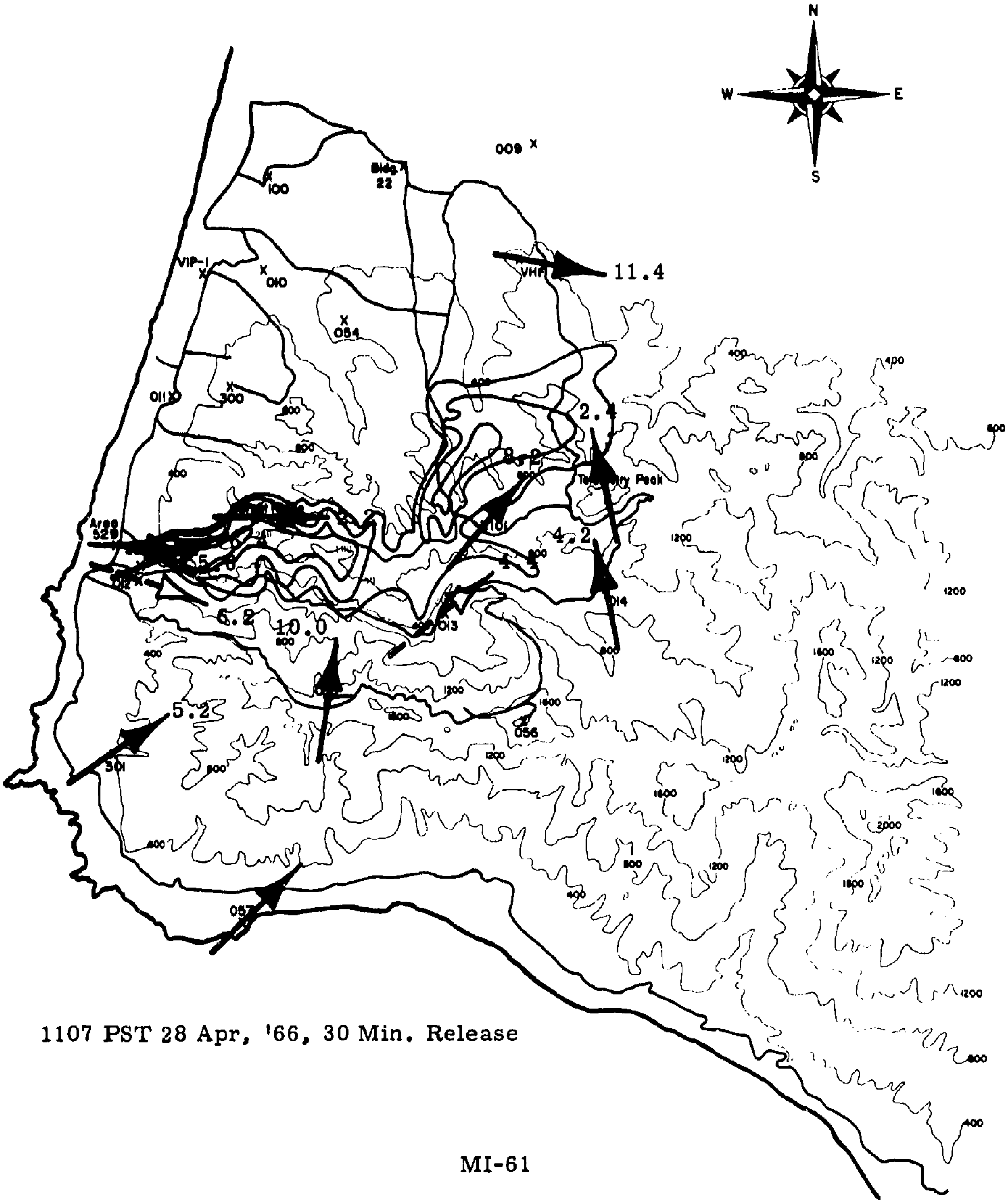
1407 PST 25 Apr, '66, 30 Min. Release



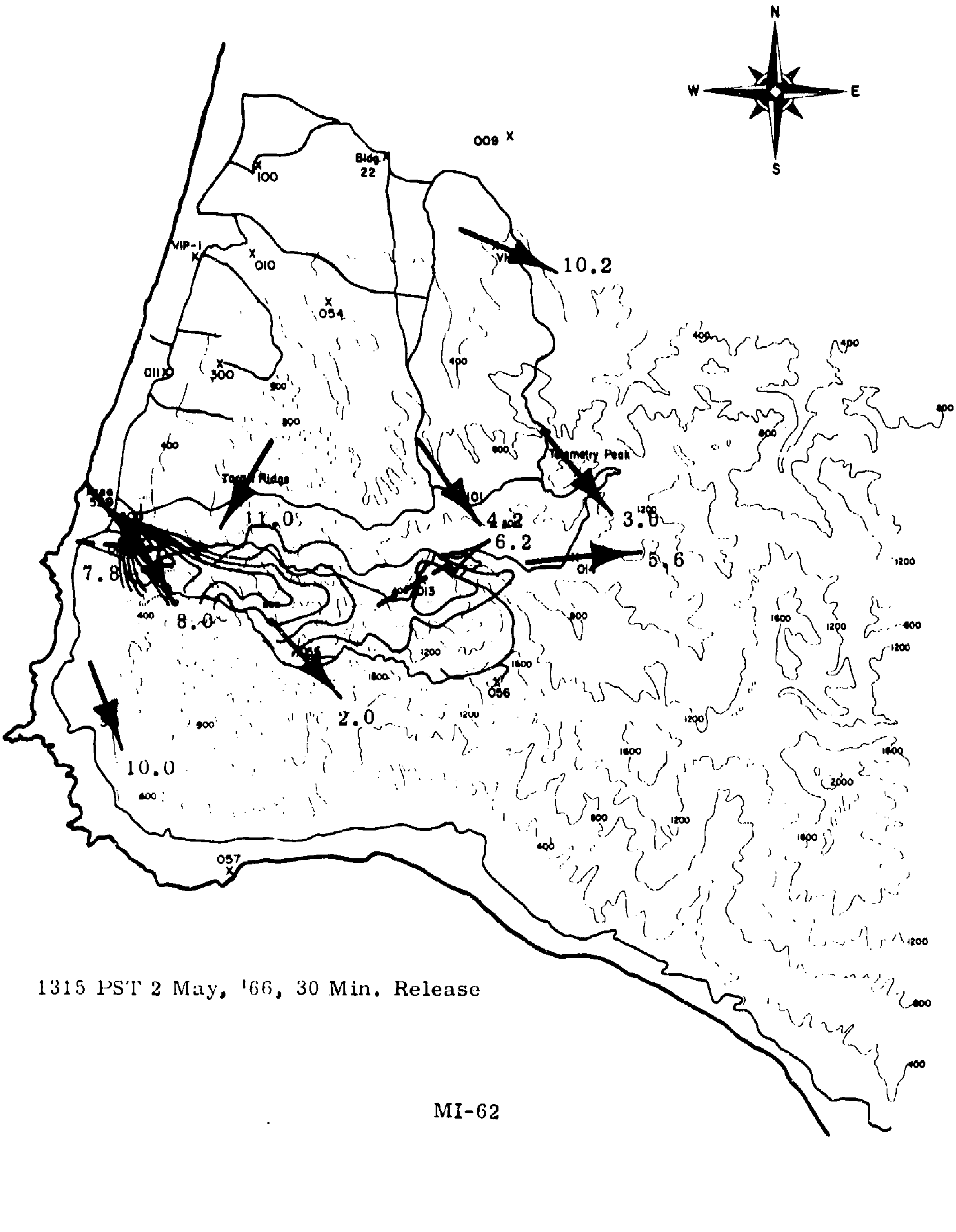
1213 PST 26 Apr, '66, 18 Min. Release



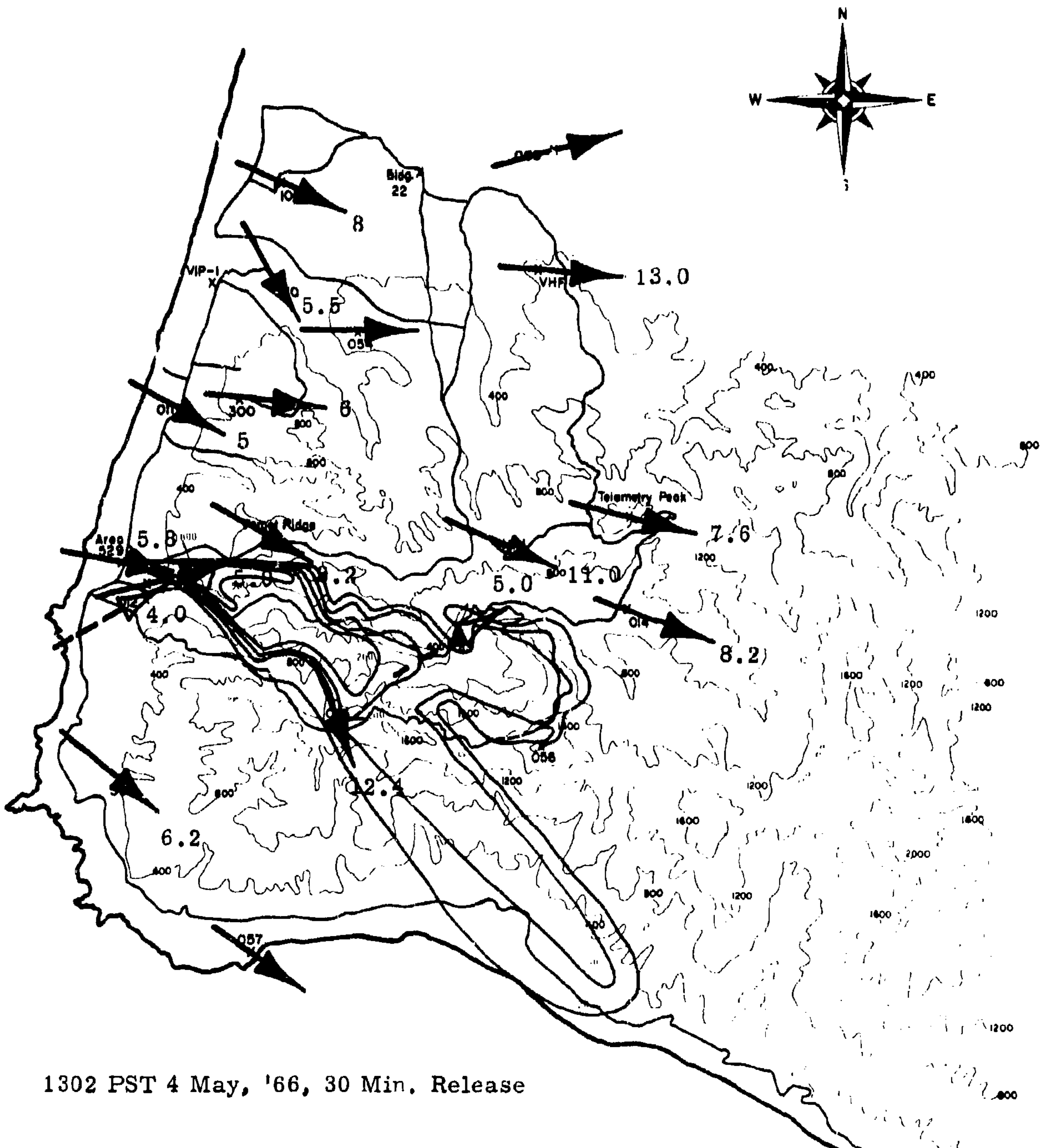
1255 PST 27 Apr, '66, 29 Min. Release



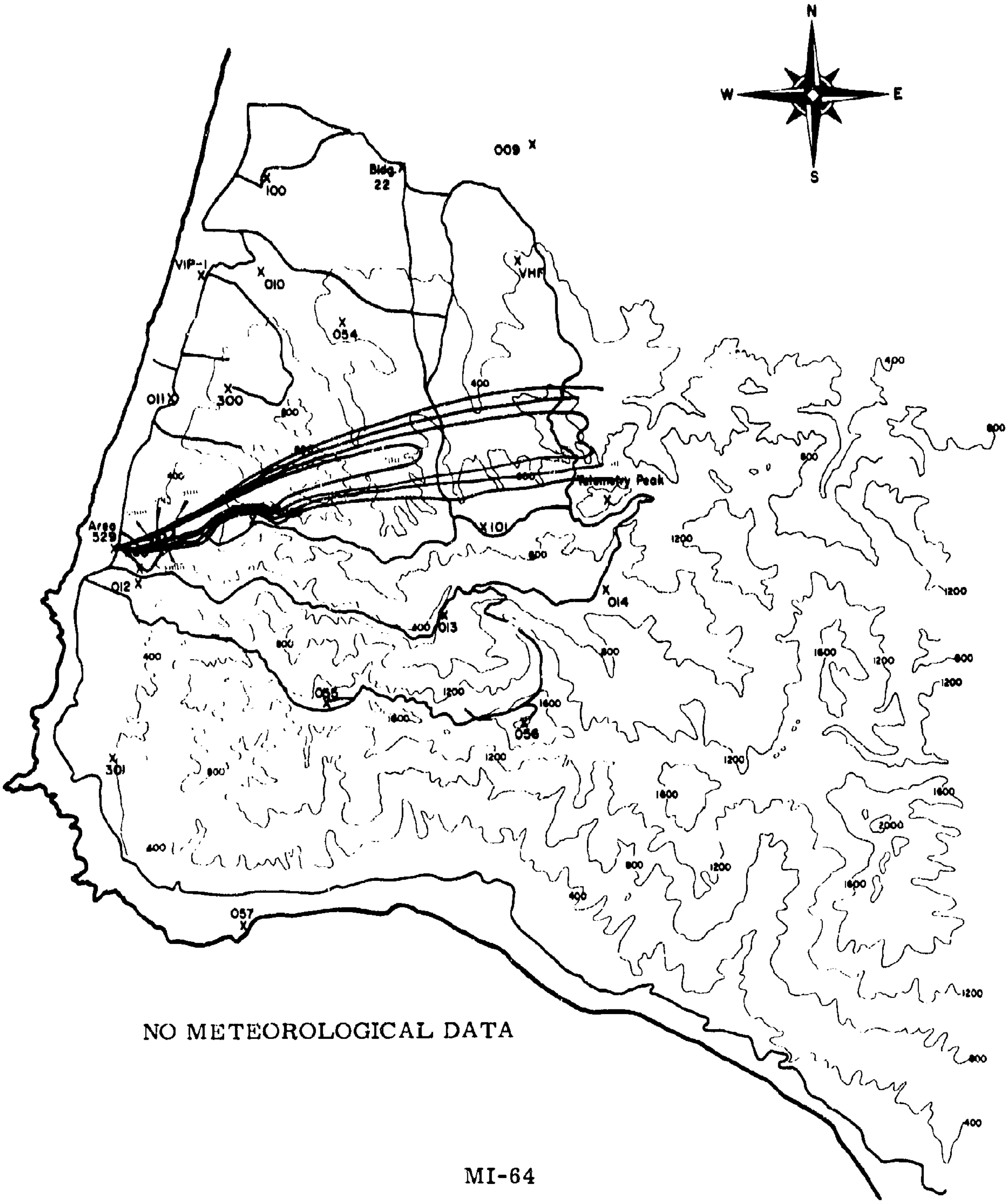
1107 PST 28 Apr, '66, 30 Min. Release



1315 PST 2 May, '66, 30 Min. Release



1302 PST 4 May, '66, 30 Min. Release



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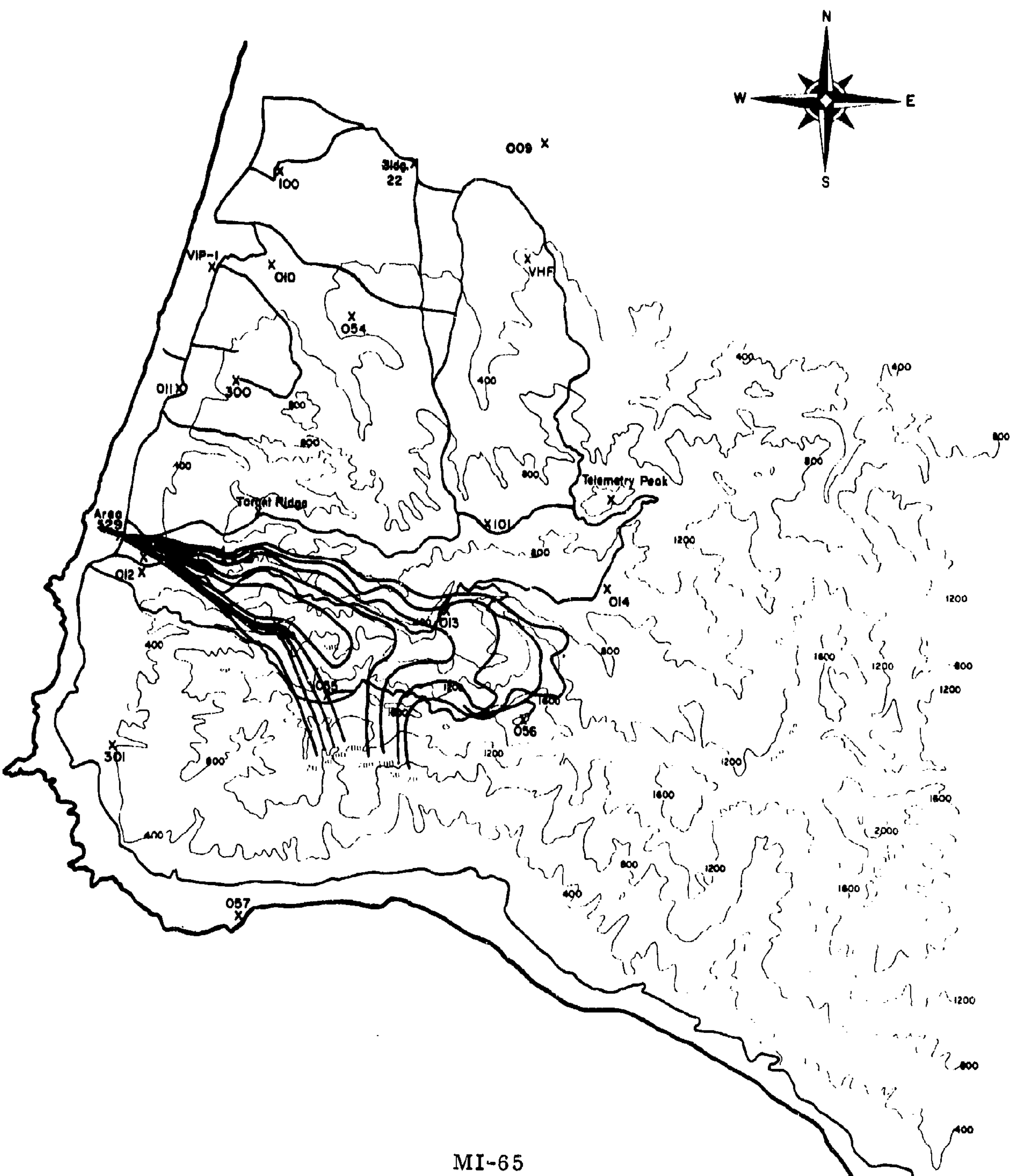
N
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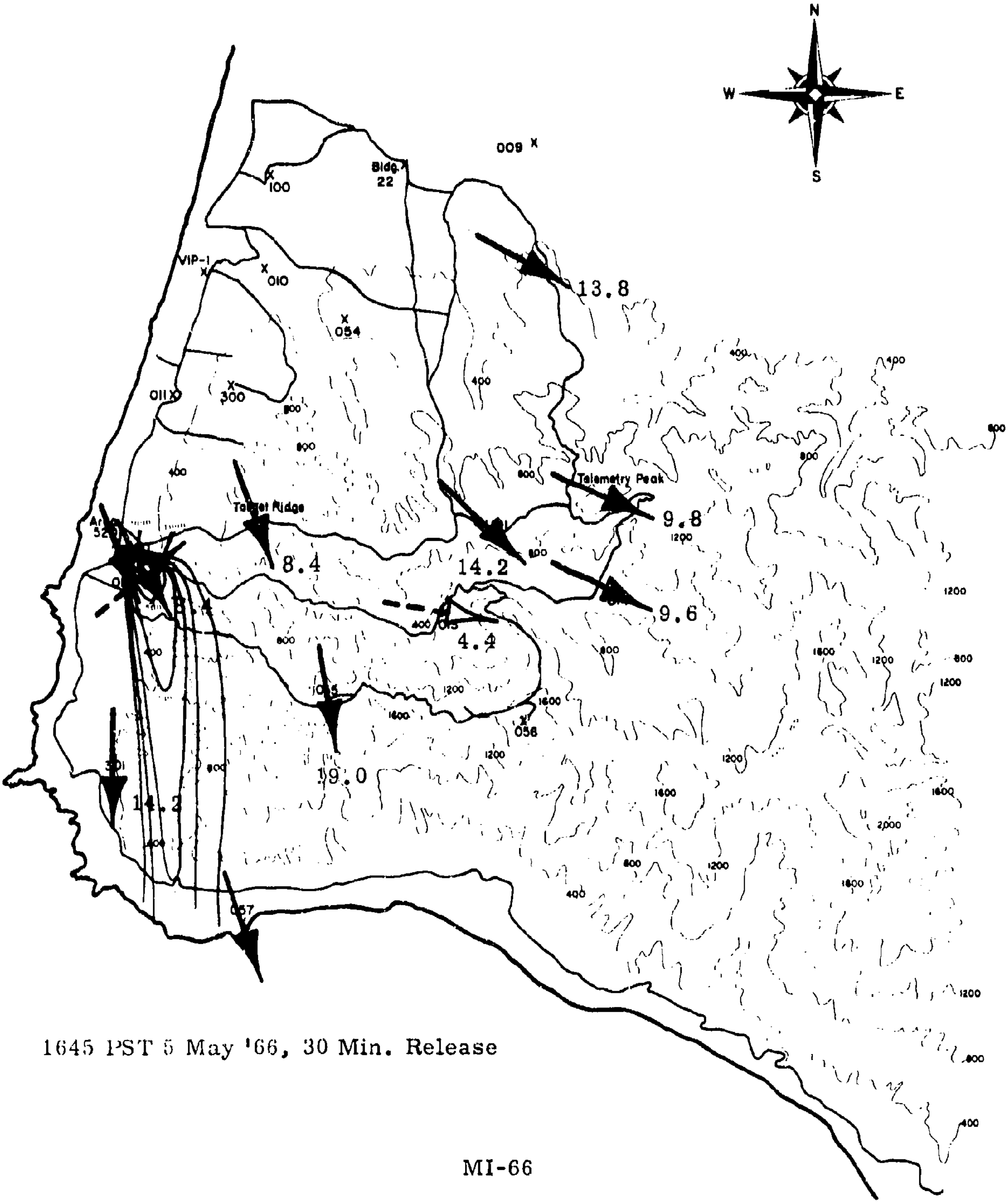
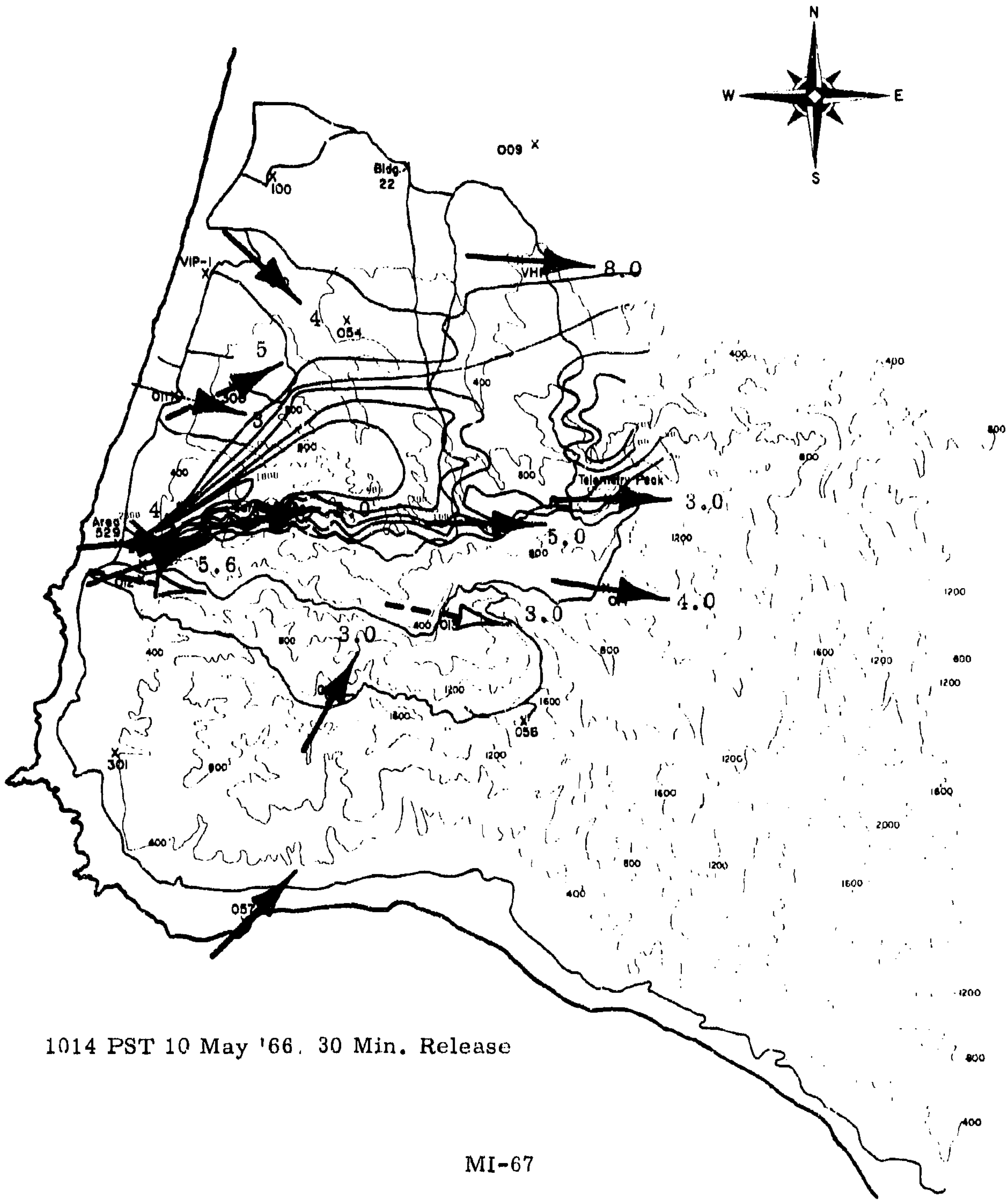
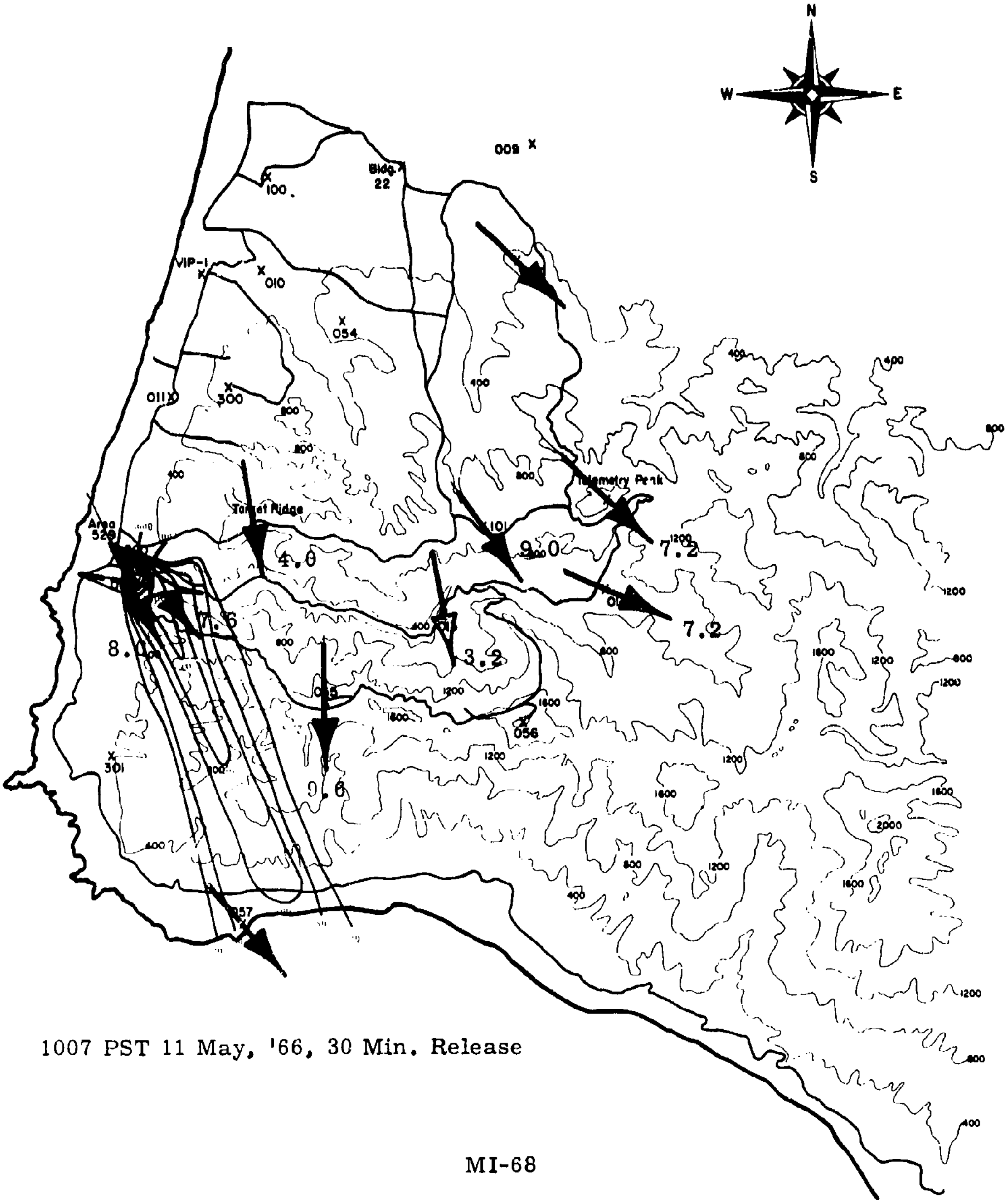
MI-65



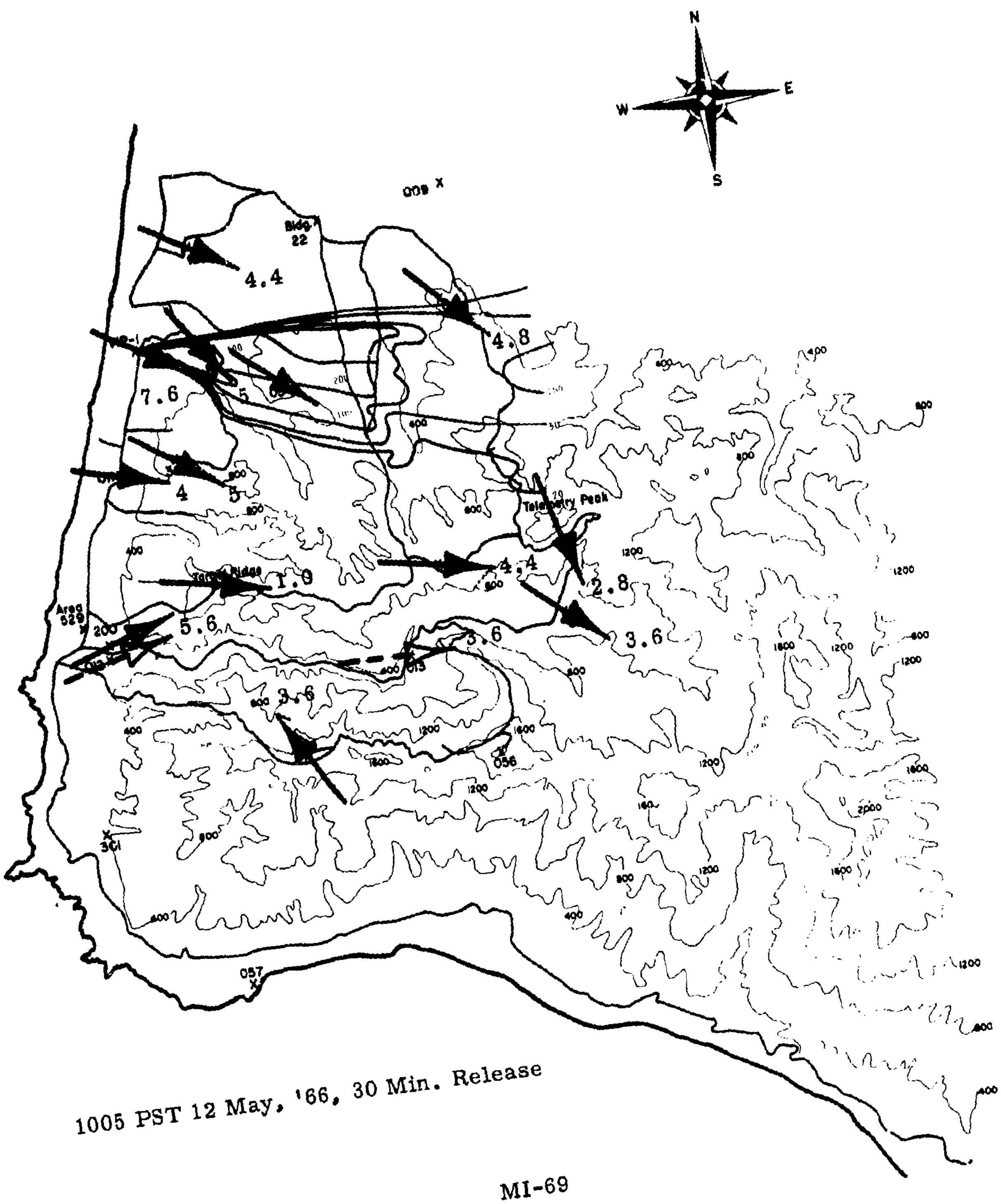
1645 PST 5 May '66, 30 Min. Release



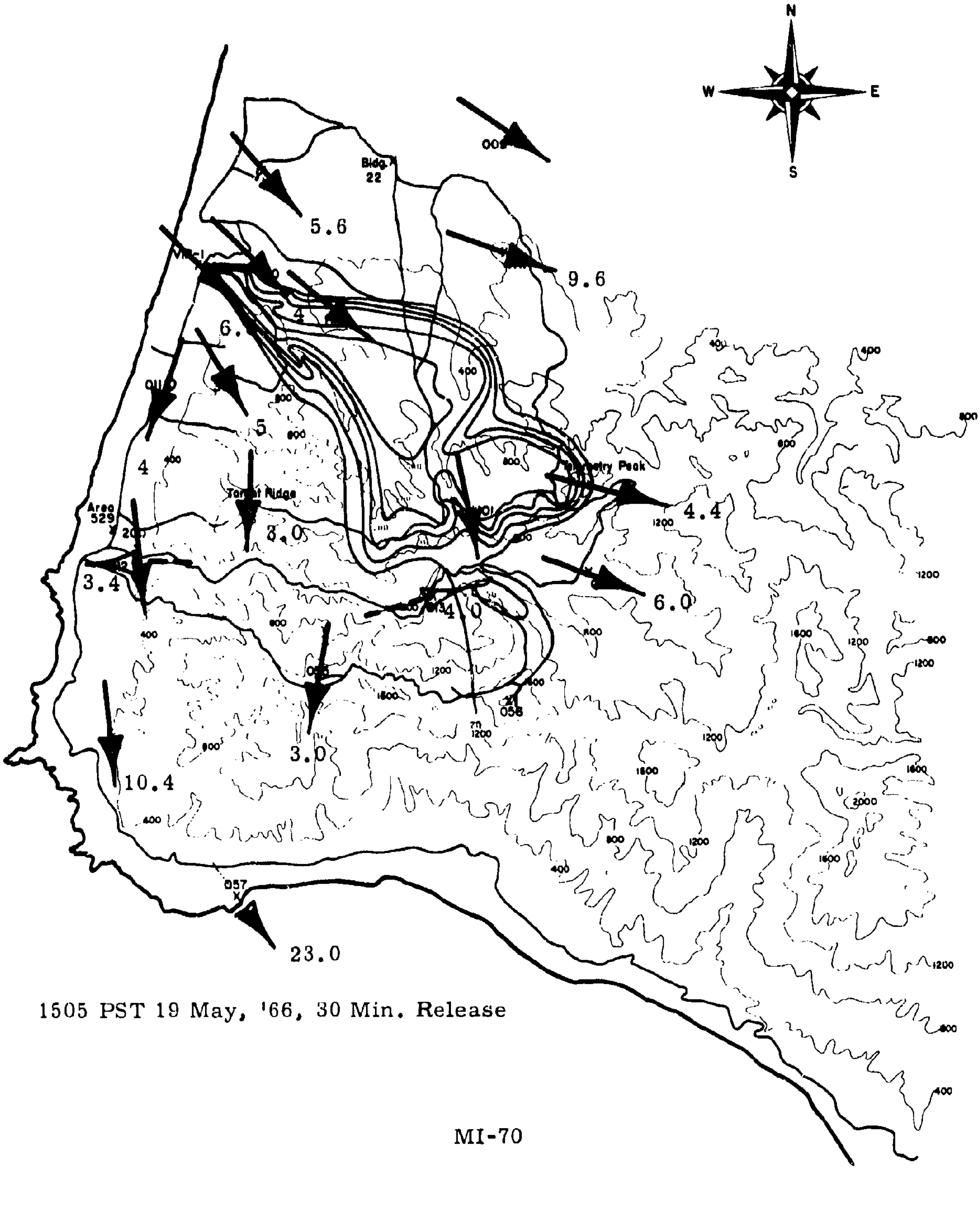
1014 PST 10 May '66. 30 Min. Release



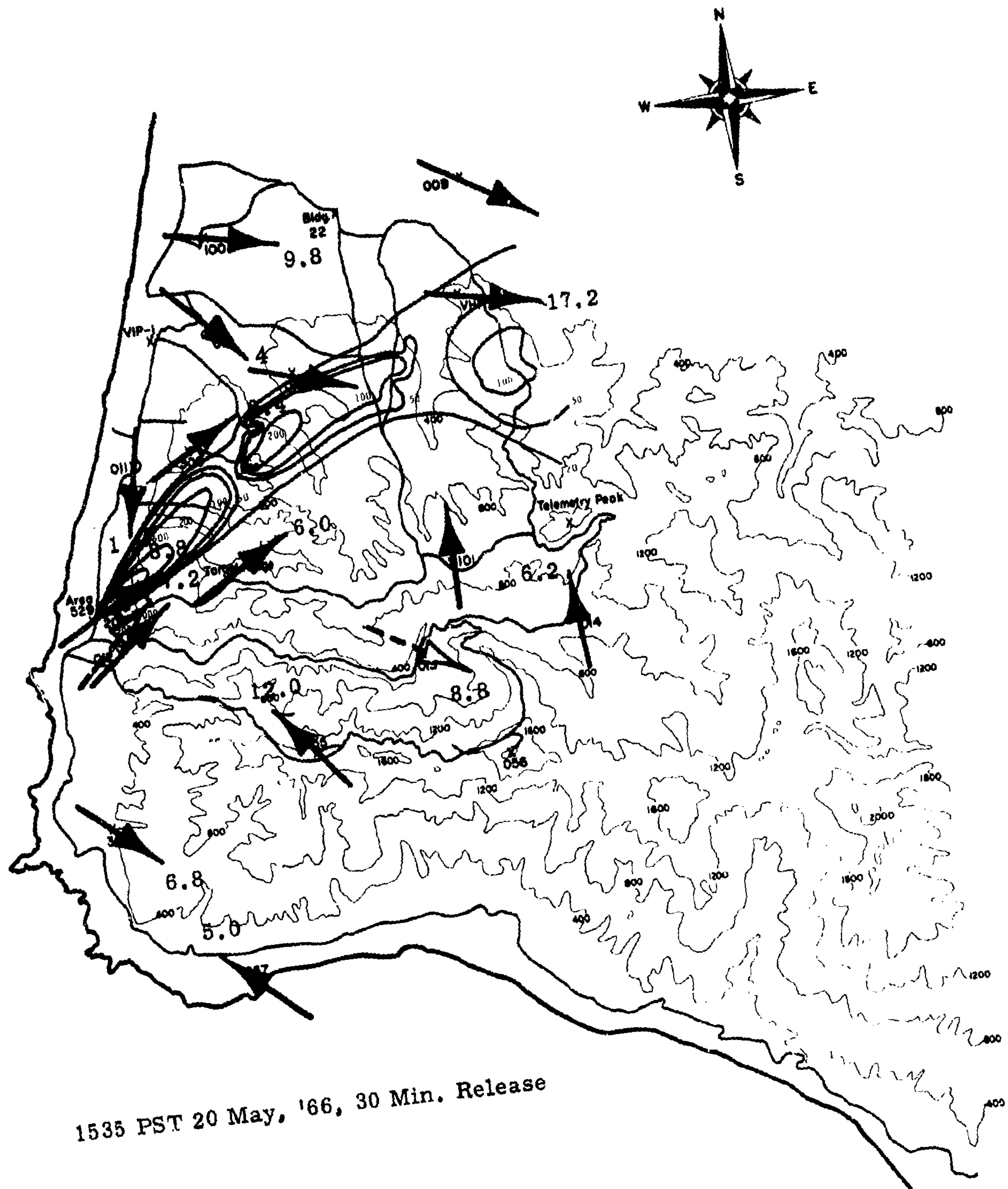
1007 PST 11 May, '66, 30 Min. Release



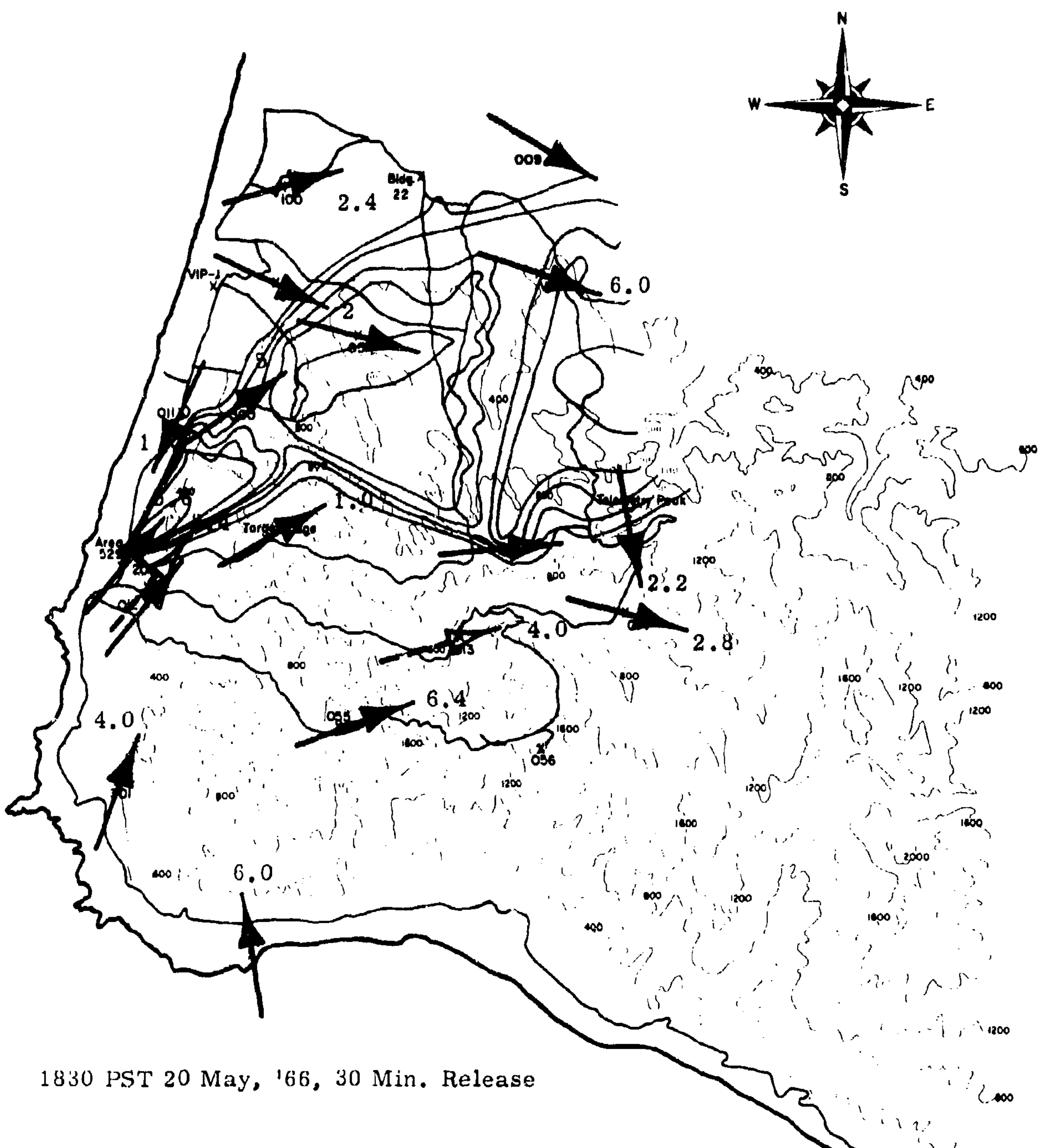
1005 PST 12 May, '66, 30 Min. Release



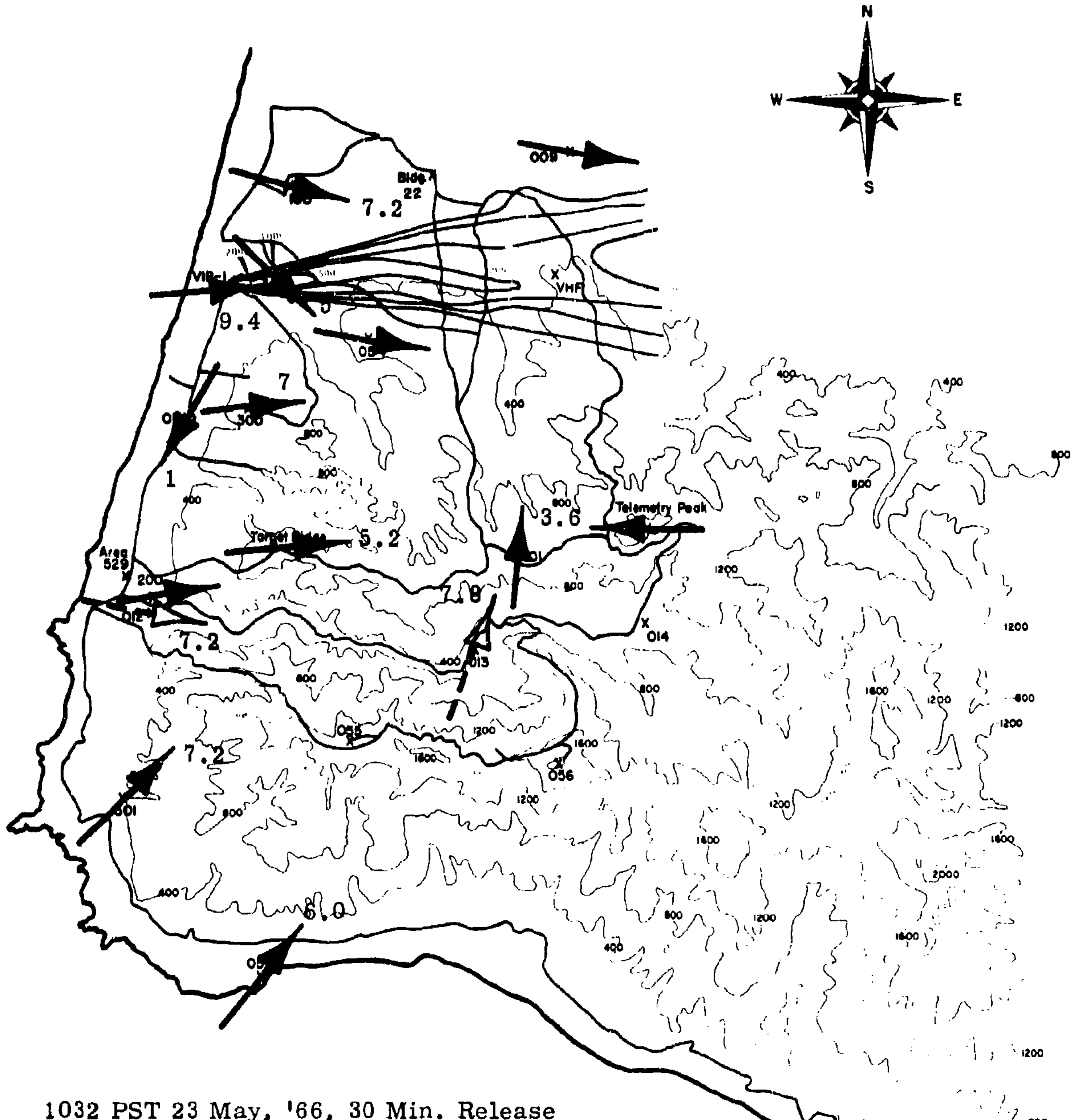
1505 PST 19 May, '66, 30 Min. Release



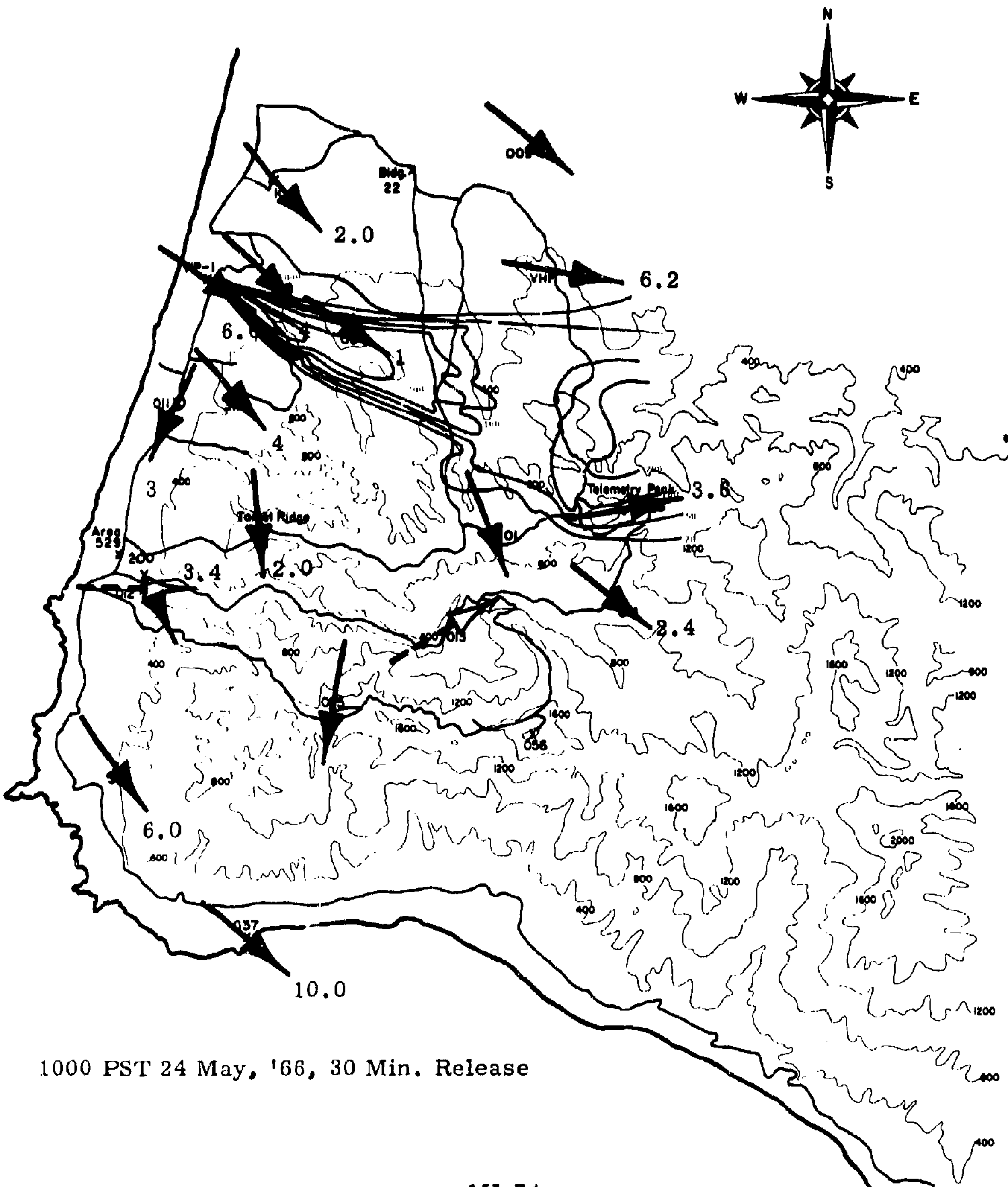
1535 PST 20 May, '66, 30 Min. Release



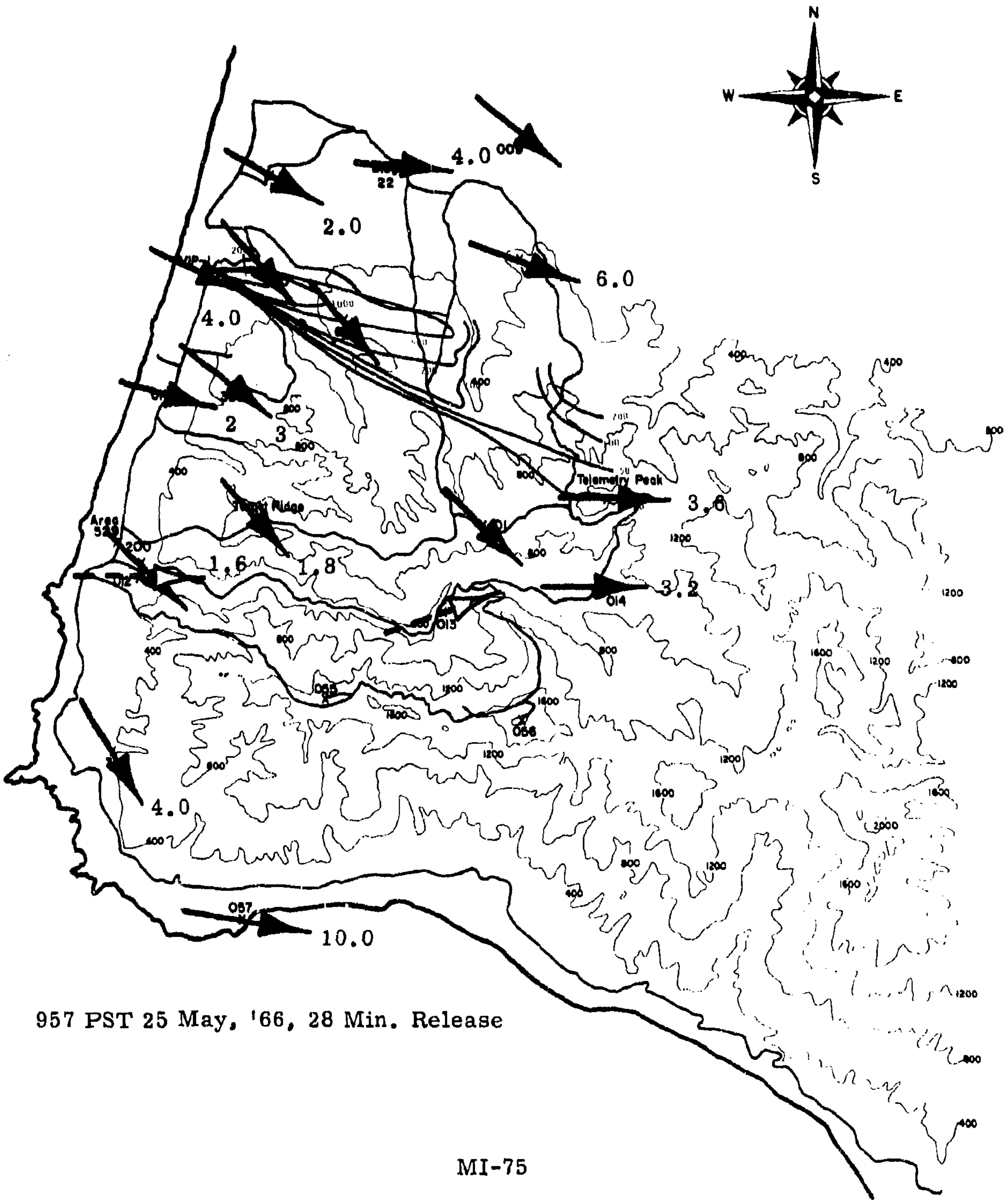
1830 PST 20 May, '66, 30 Min. Release



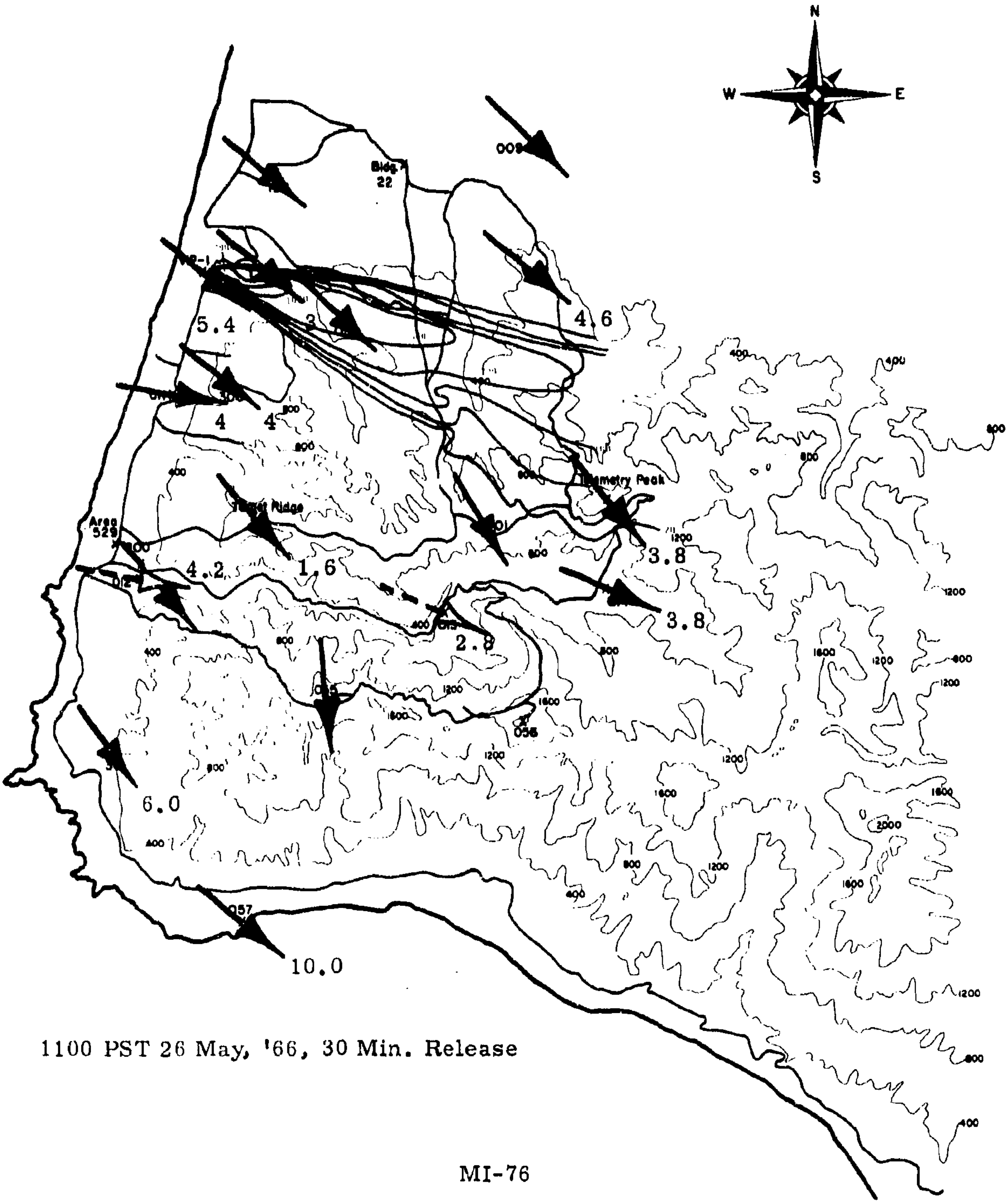
1032 PST 23 May, '66, 30 Min. Release



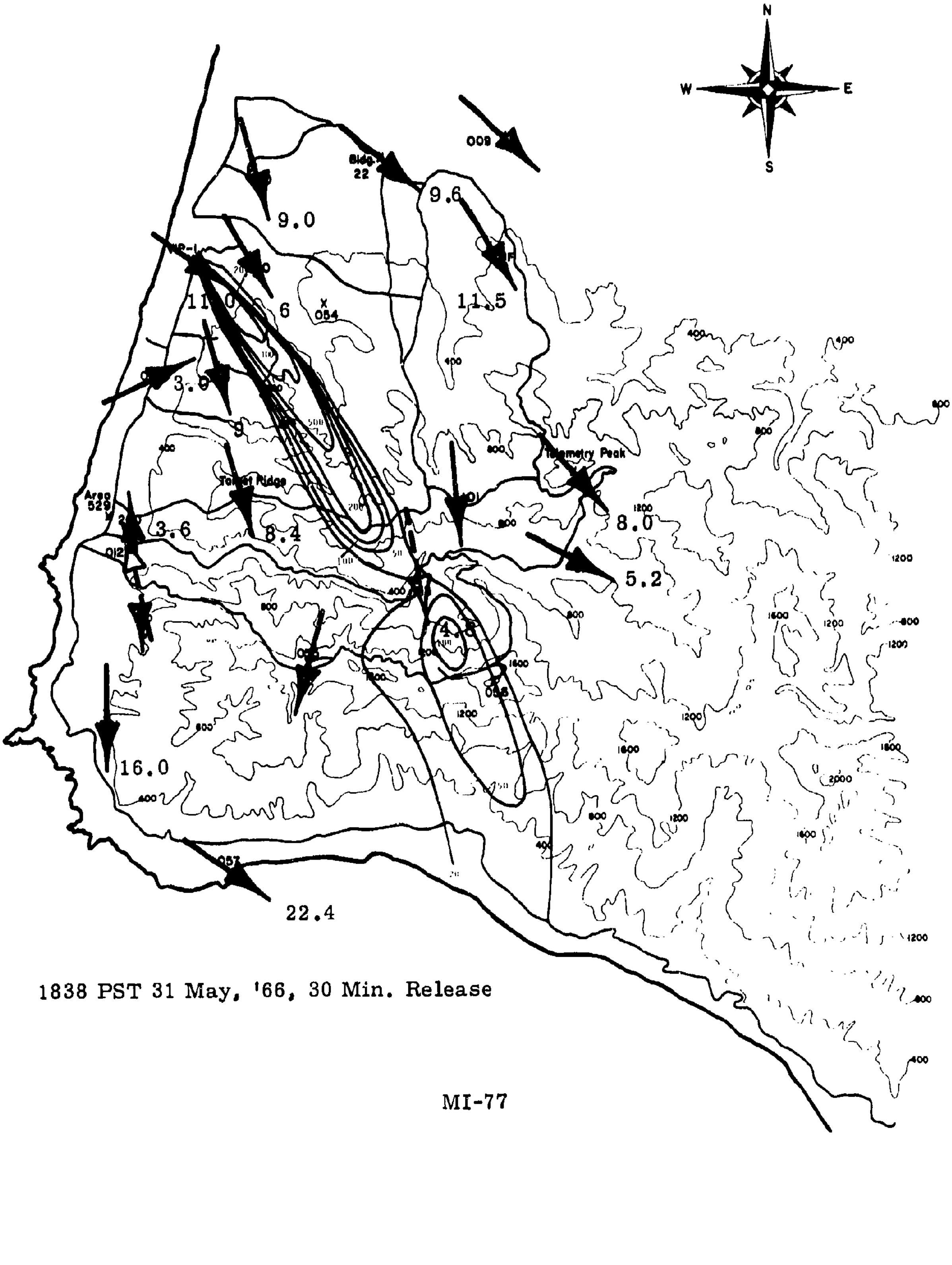
1000 PST 24 May, '66, 30 Min. Release



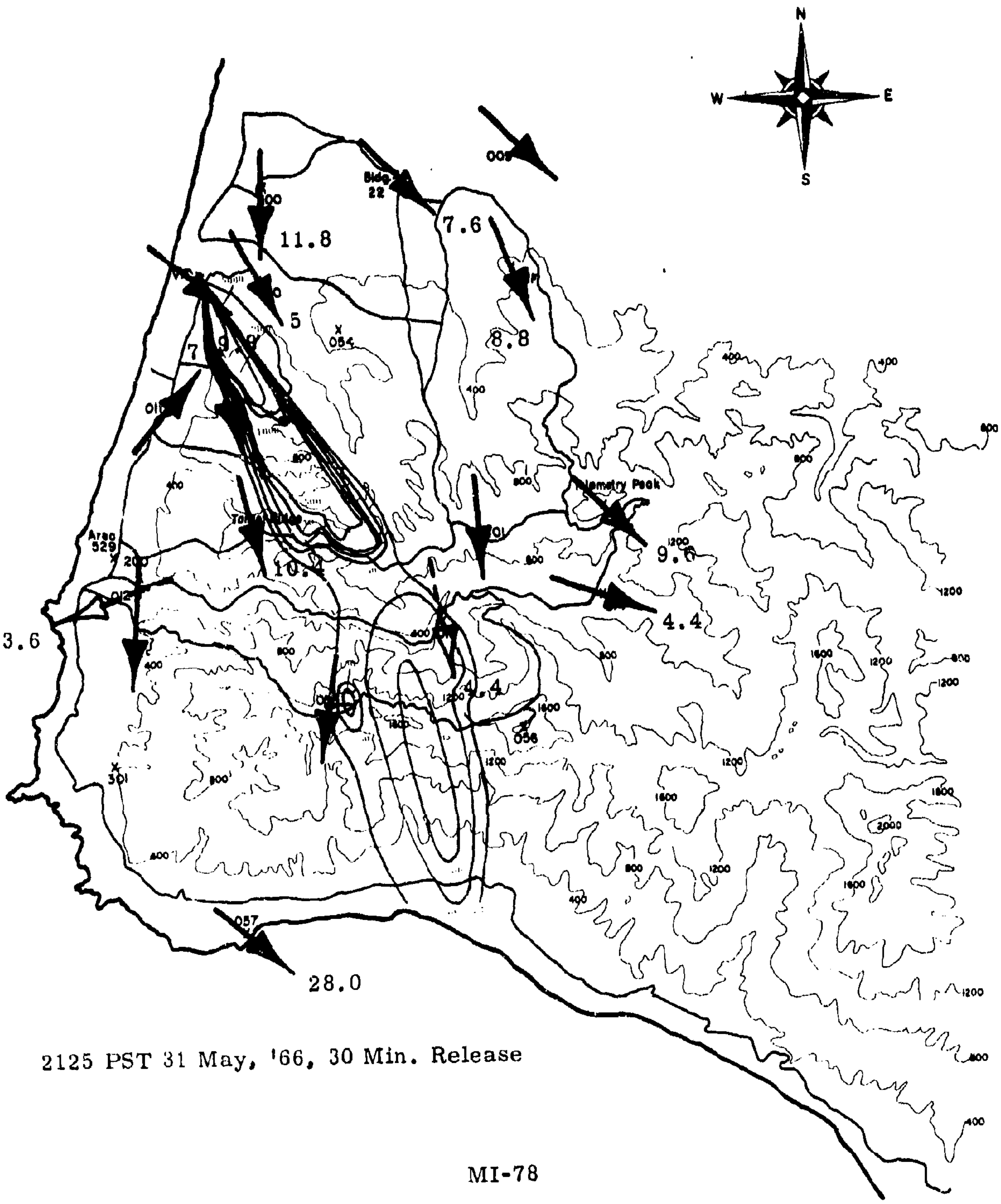
957 PST 25 May, '66, 28 Min. Release



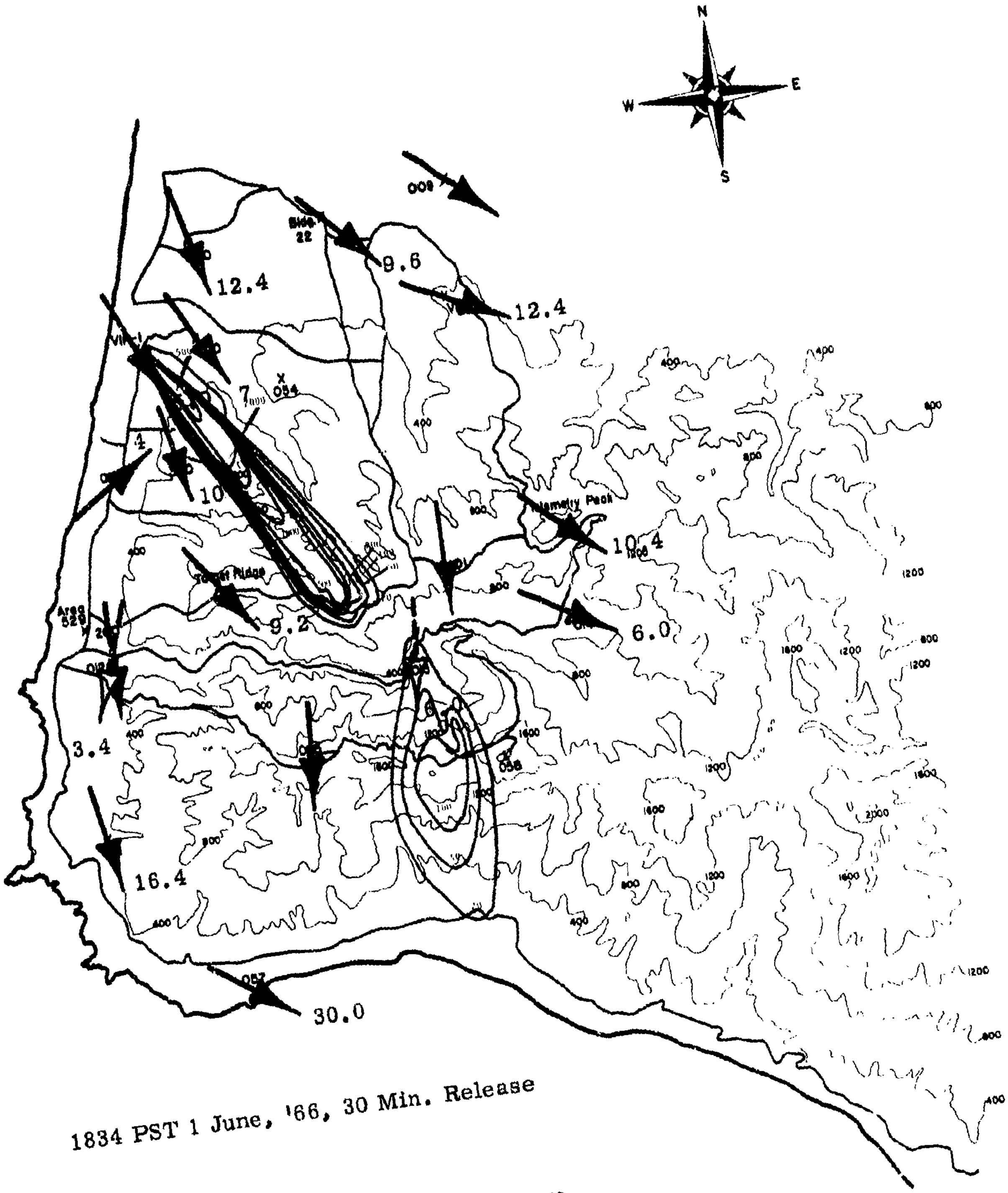
1100 PST 26 May, '66, 30 Min. Release



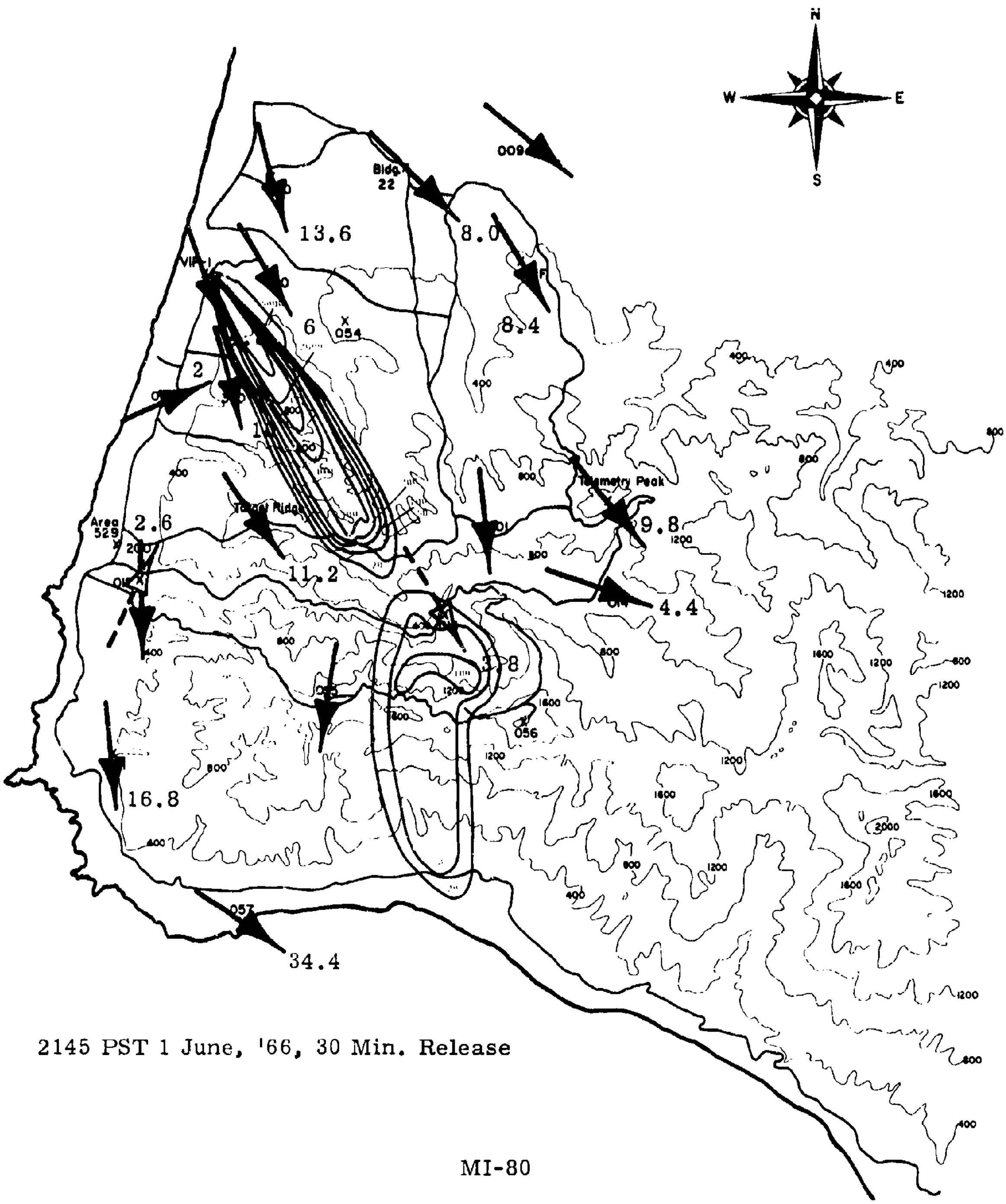
1838 PST 31 May, '66, 30 Min. Release



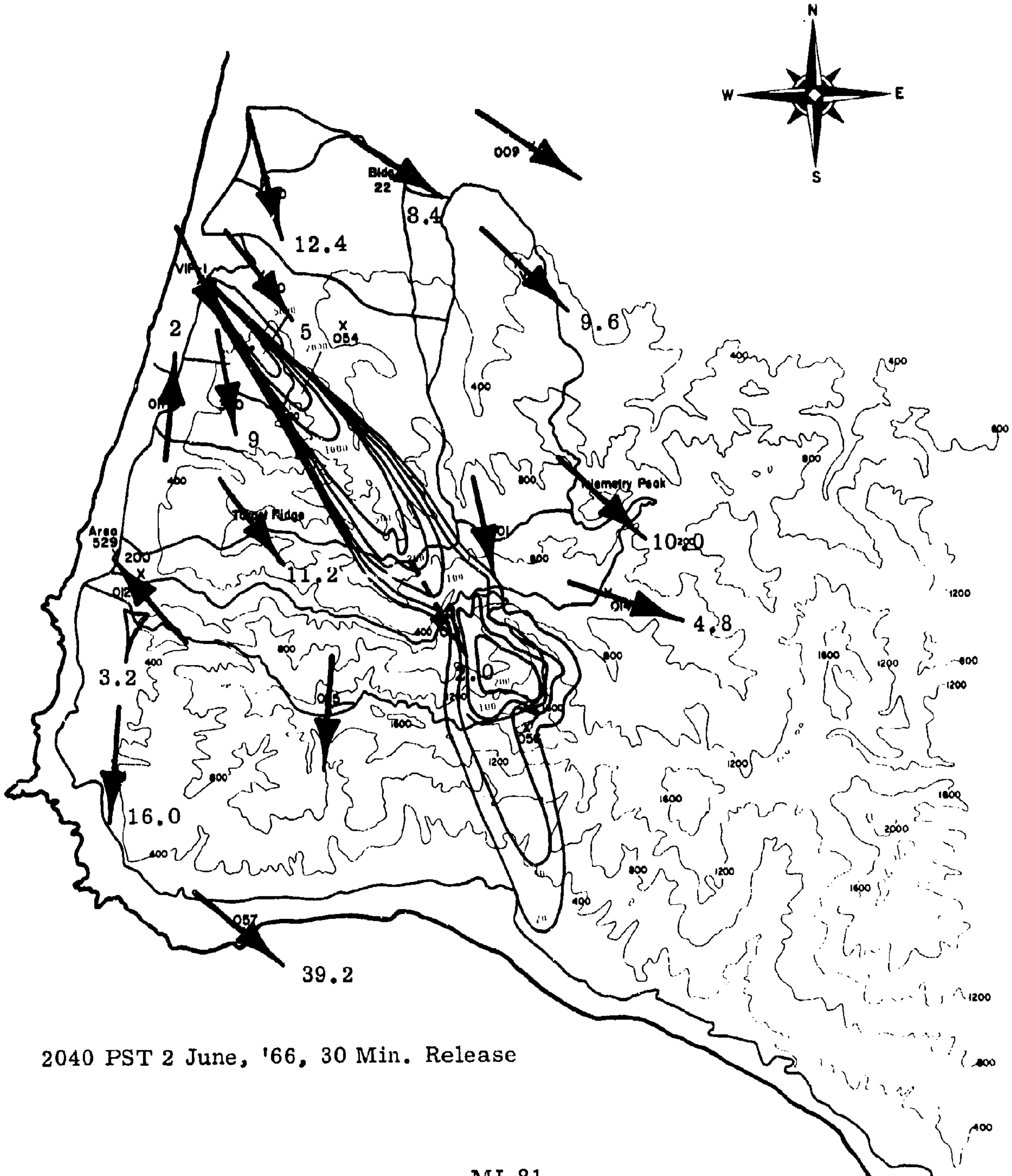
2125 PST 31 May, '66, 30 Min. Release



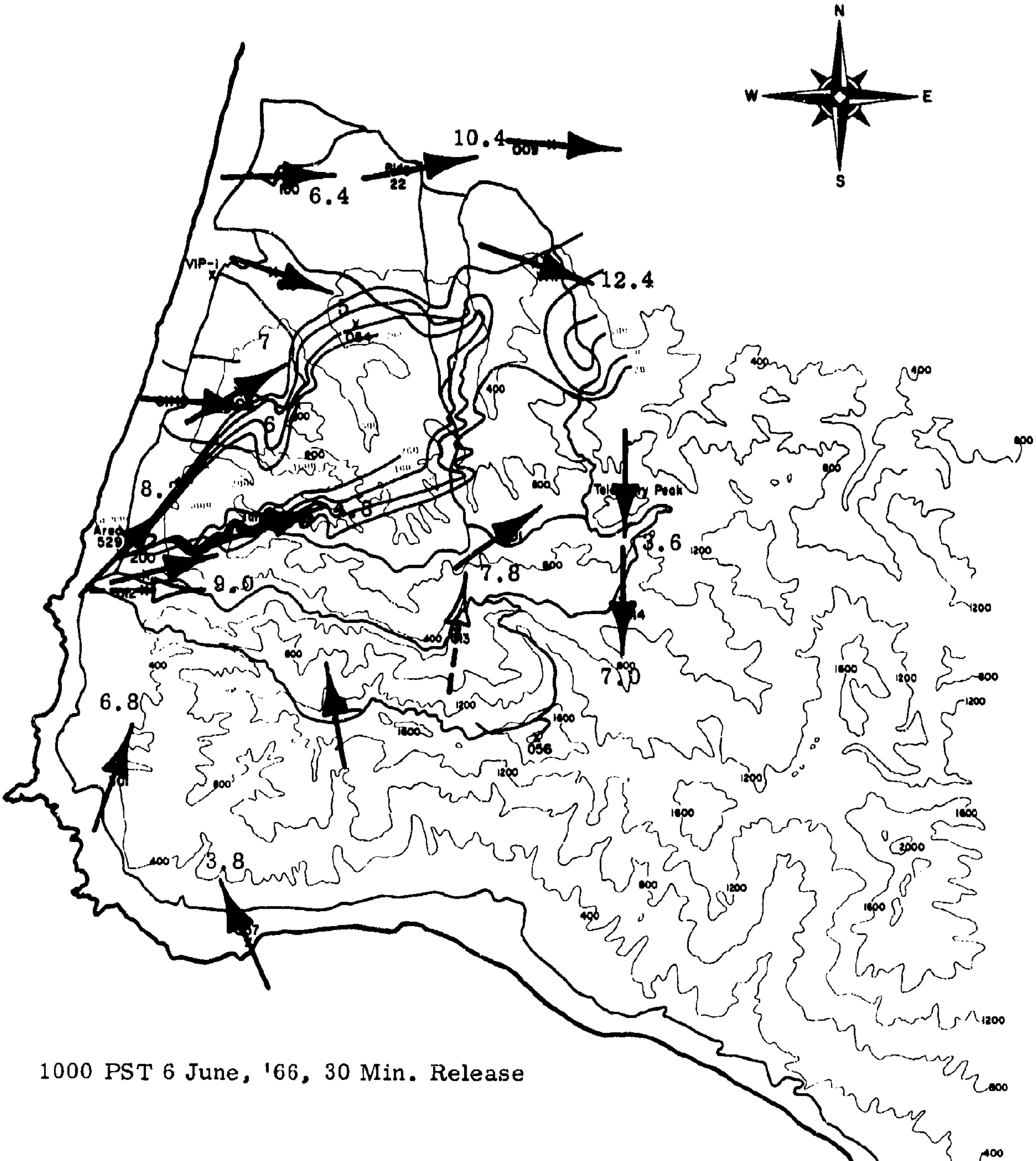
1834 PST 1 June, '66, 30 Min. Release



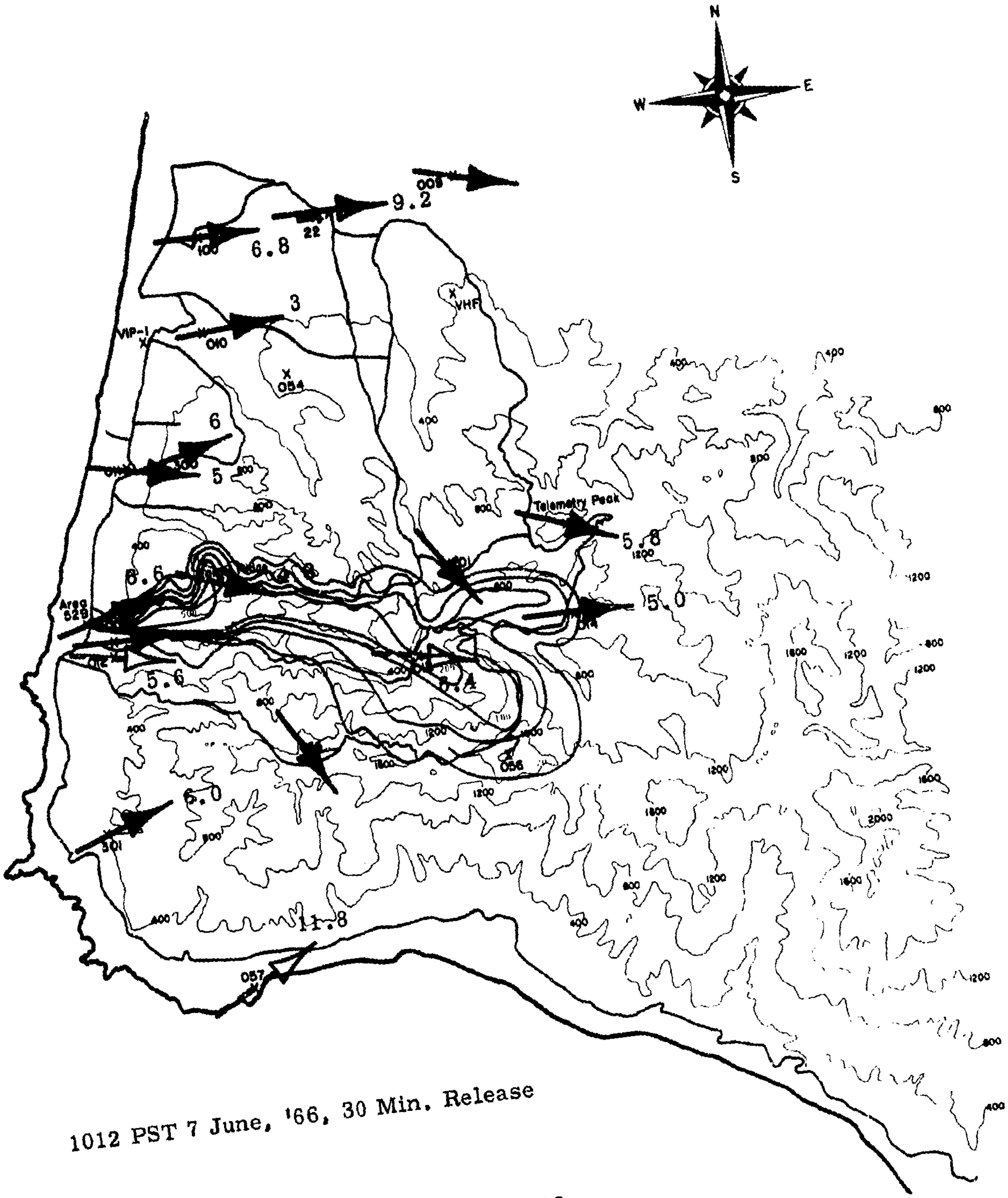
2145 PST 1 June, '66, 30 Min. Release



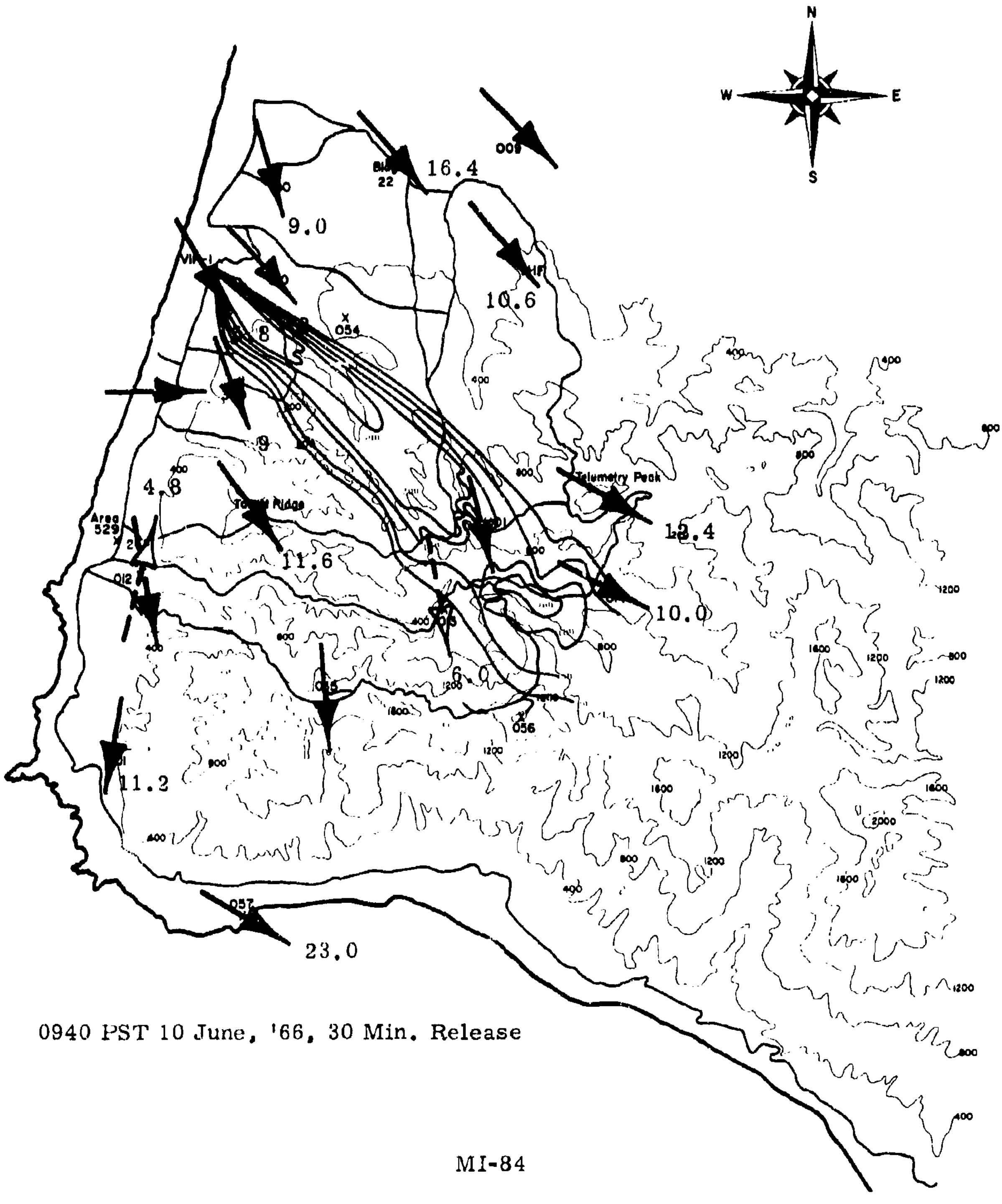
2040 PST 2 June, '66, 30 Min. Release



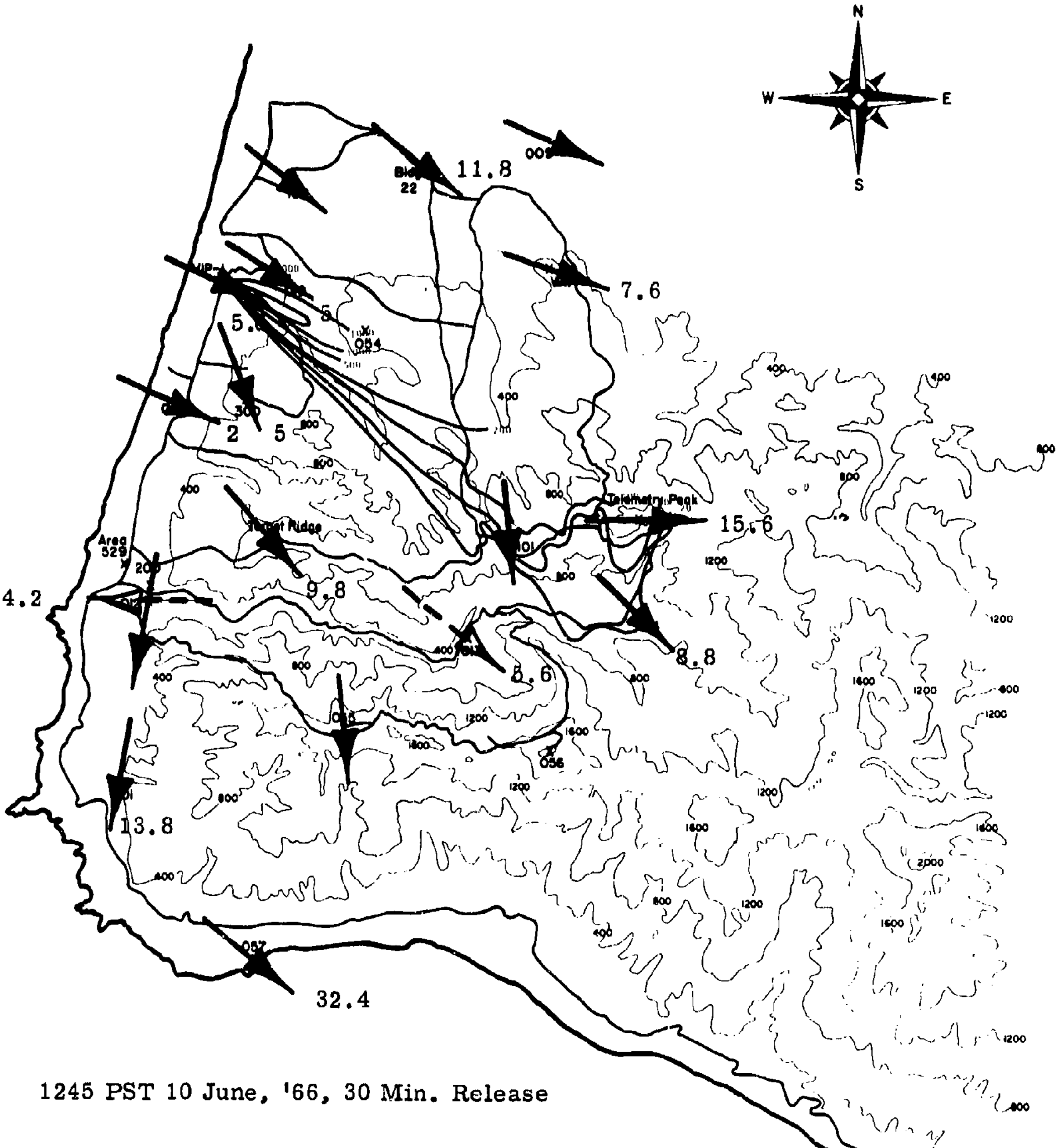
1000 PST 6 June, '66, 30 Min. Release



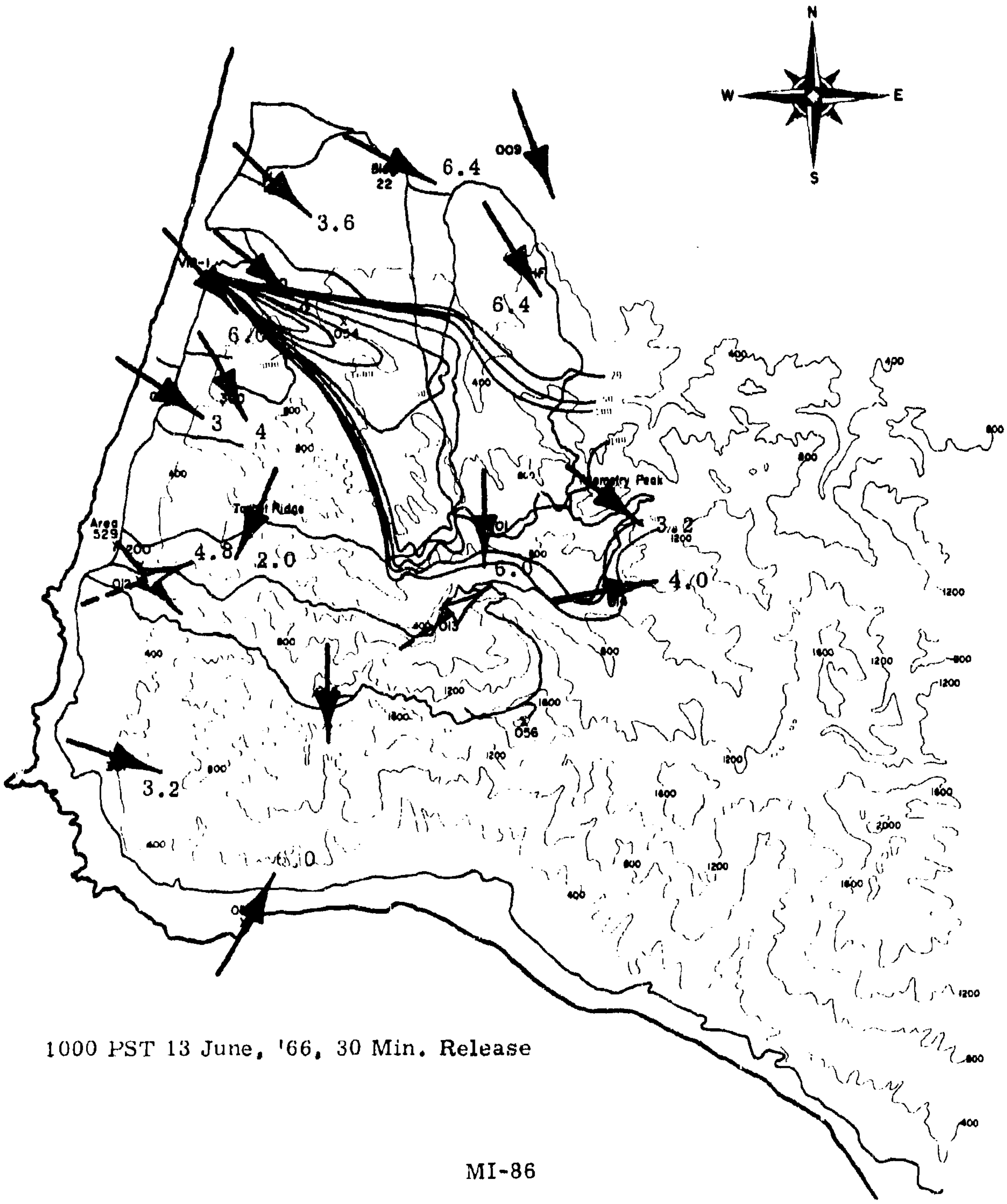
1012 PST 7 June, '66, 30 Min. Release



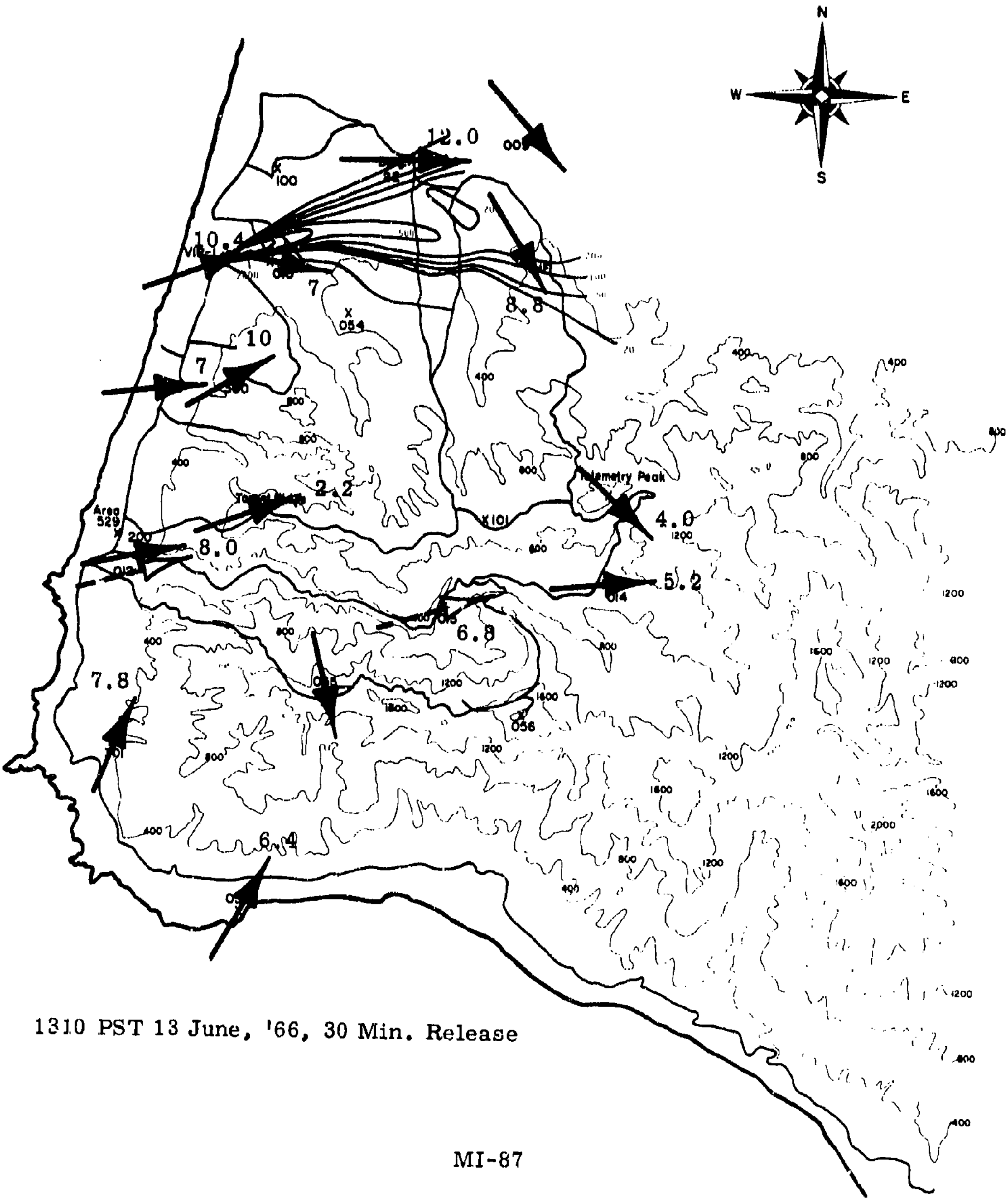
0940 PST 10 June, '66, 30 Min. Release



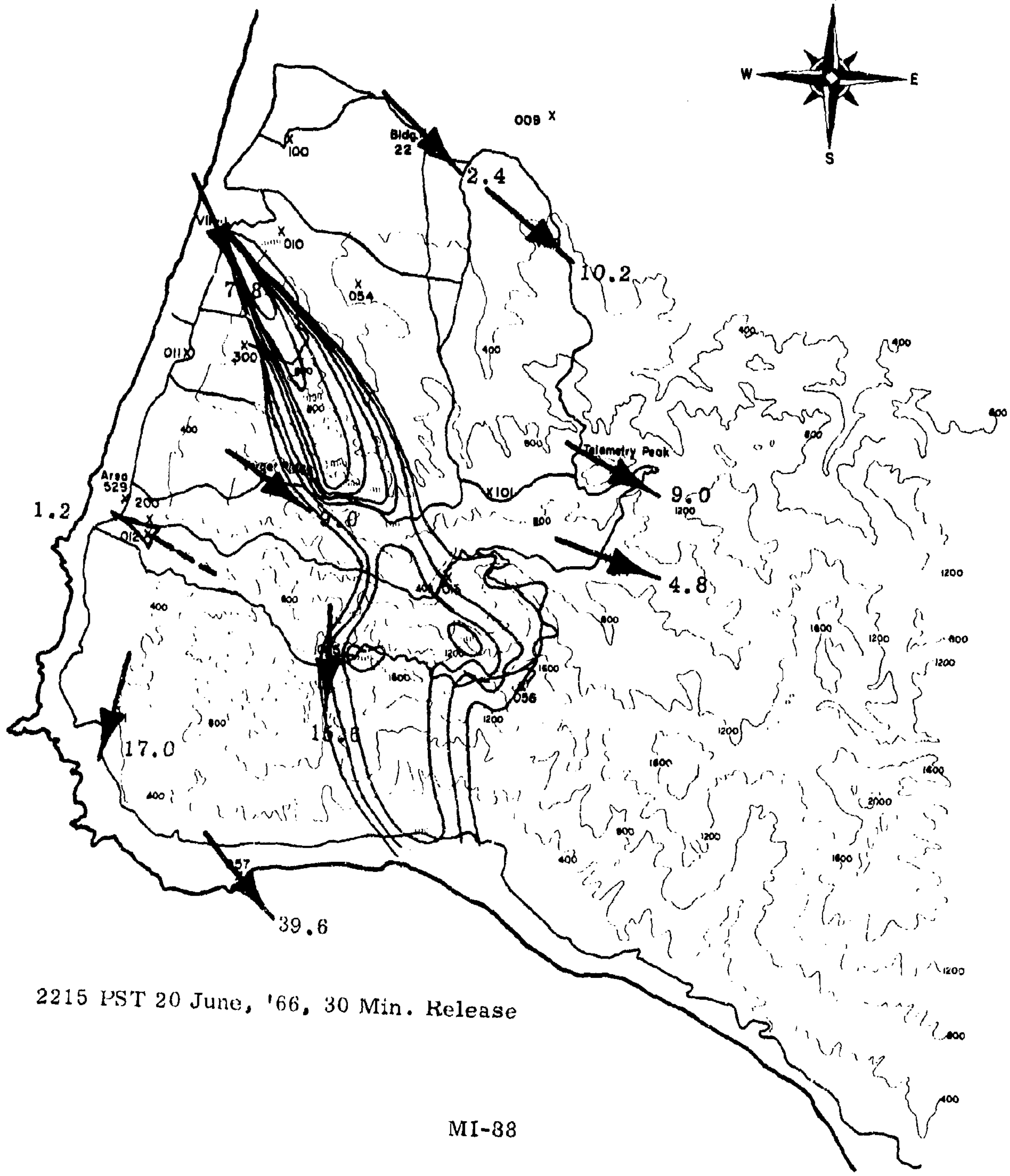
1245 PST 10 June, '66, 30 Min. Release



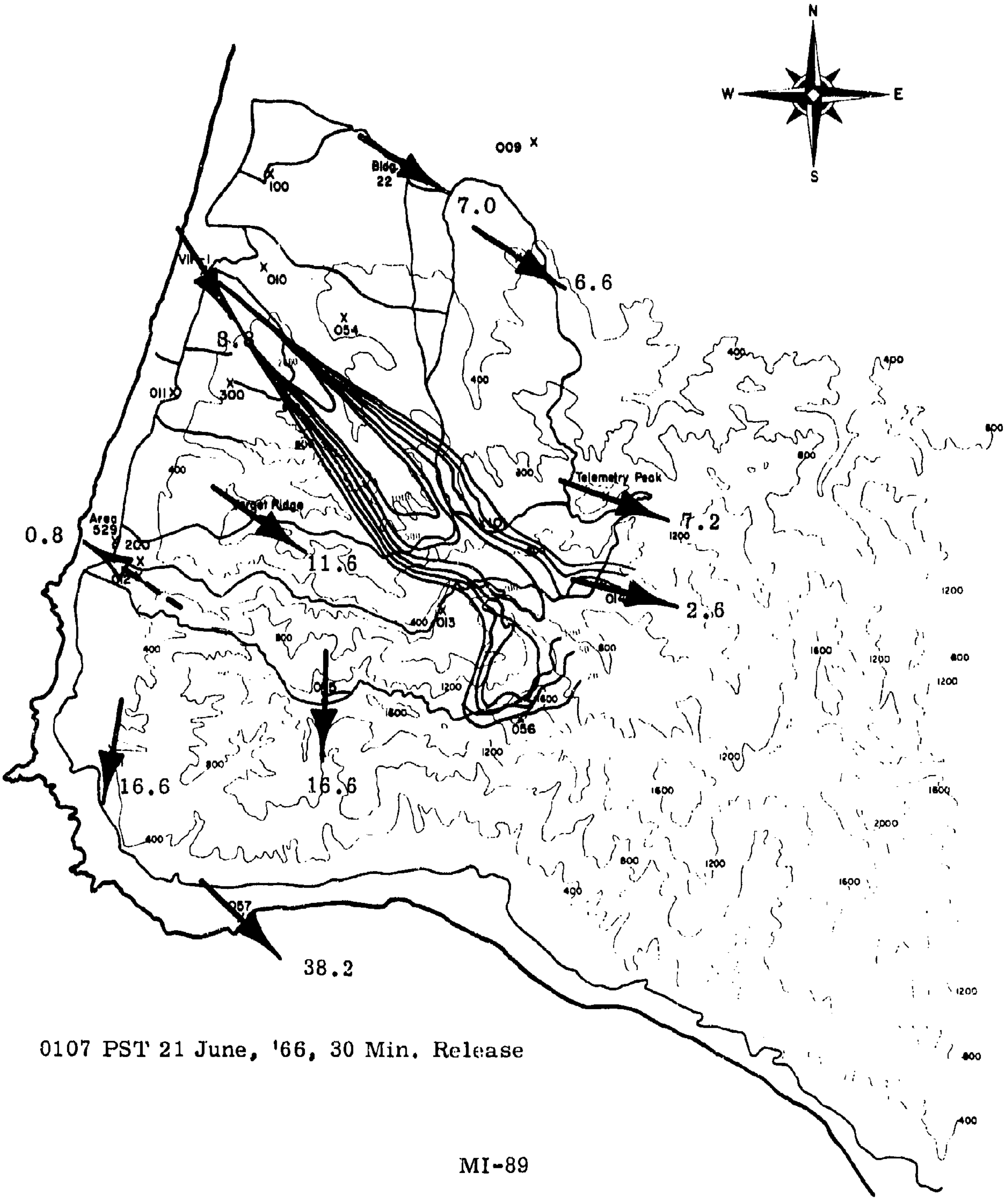
1000 PST 13 June, '66, 30 Min. Release



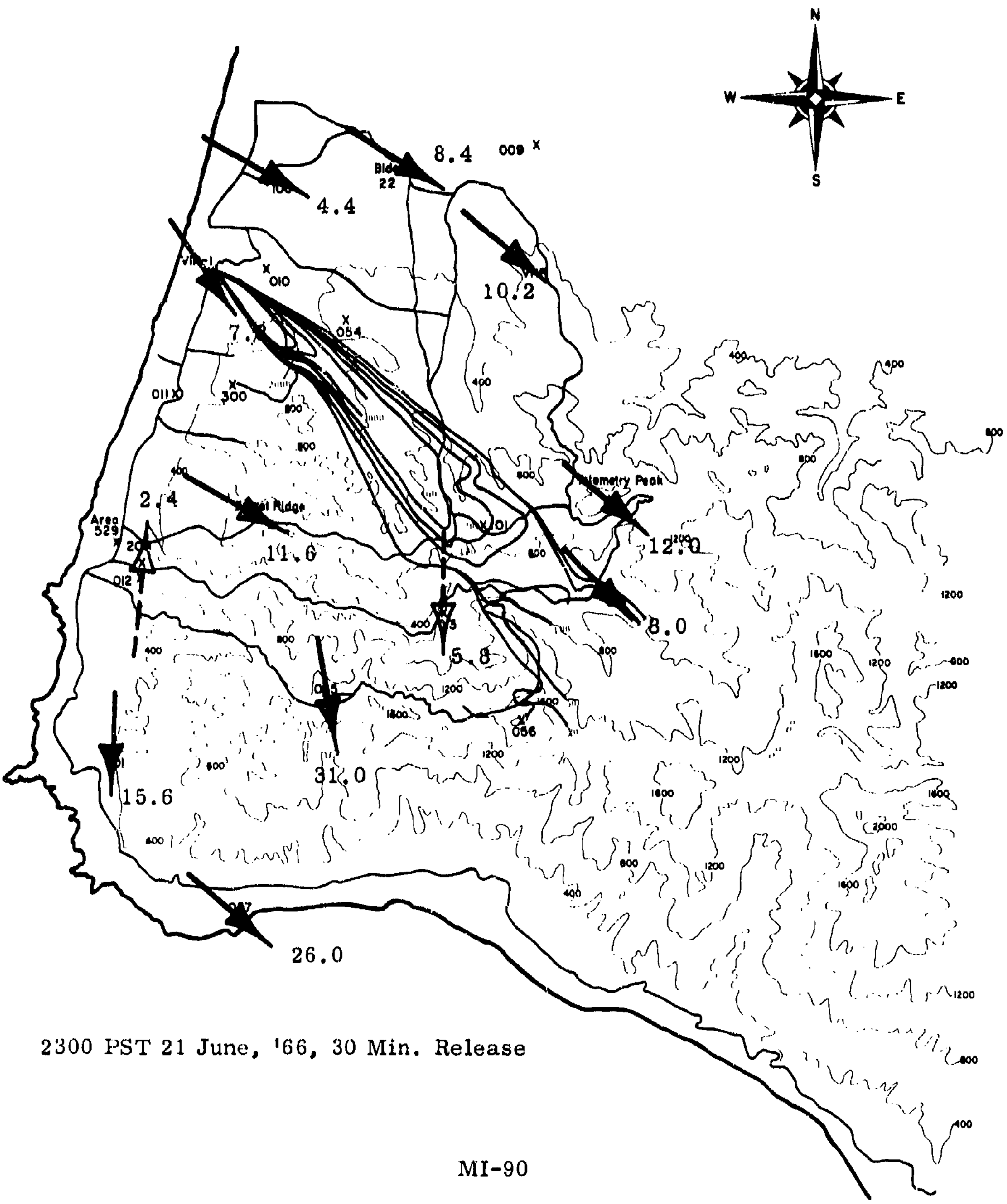
1310 PST 13 June, '66, 30 Min. Release



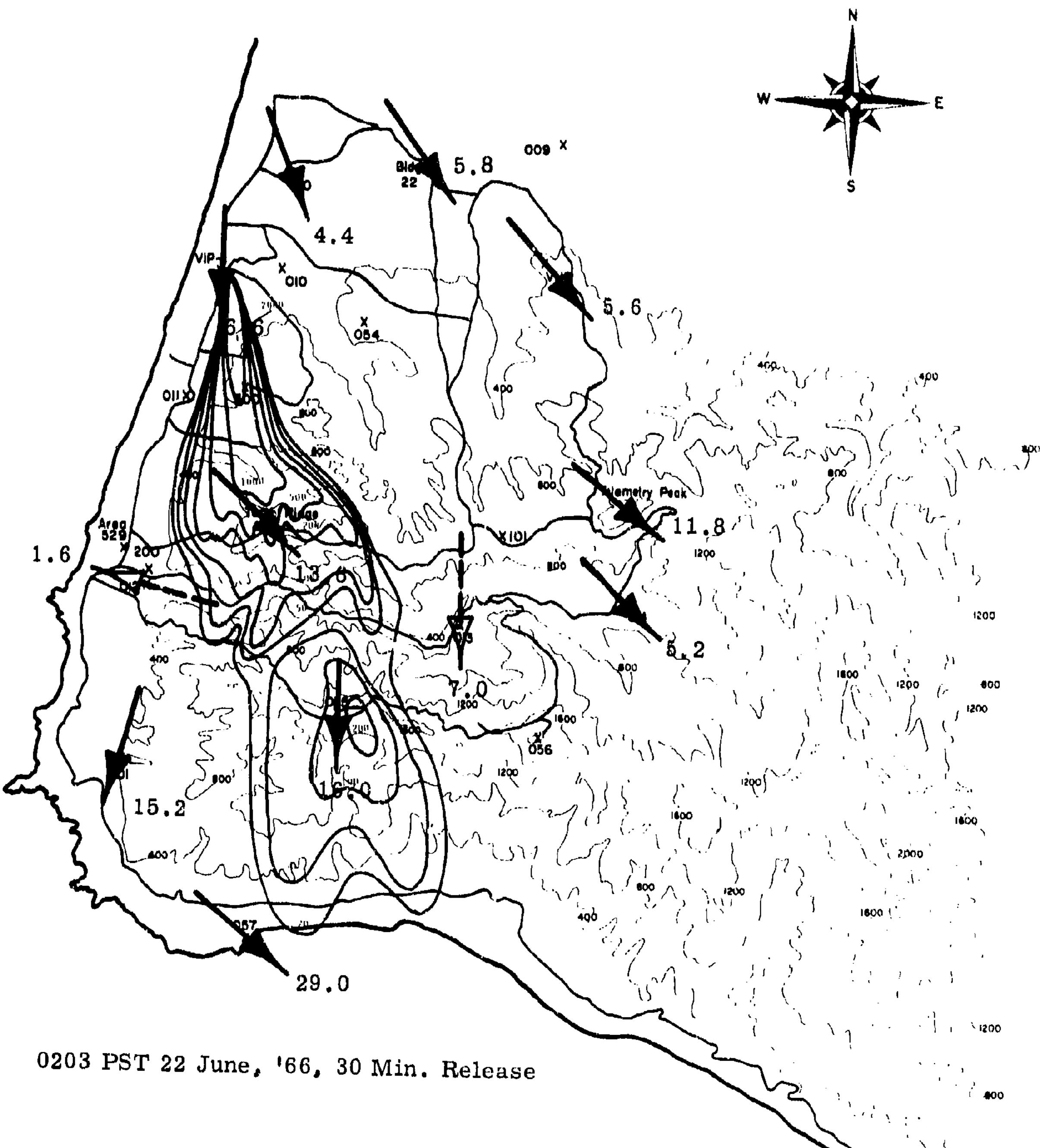
2215 PST 20 June, '66, 30 Min. Release



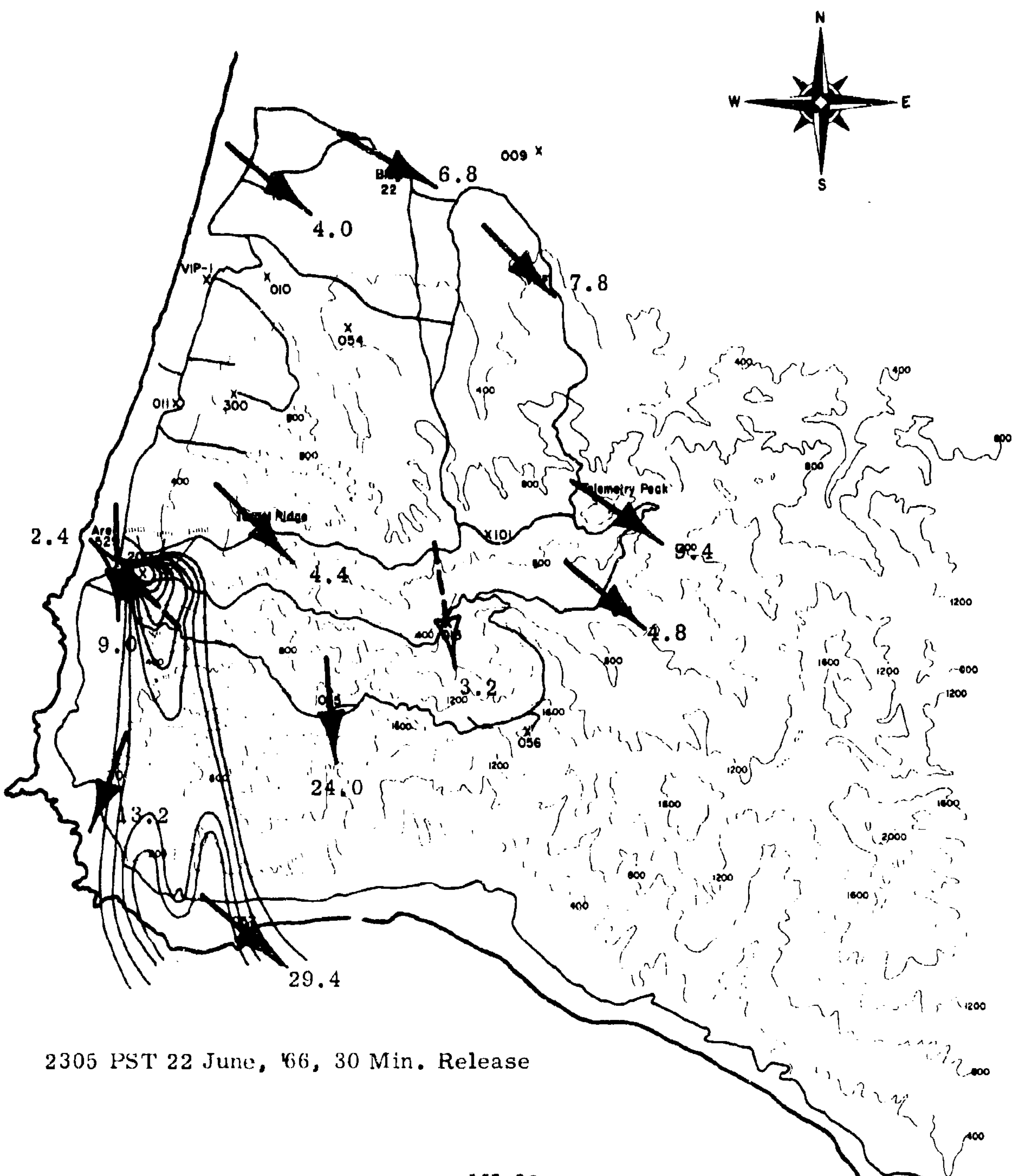
0107 PST 21 June, '66, 30 Min. Release



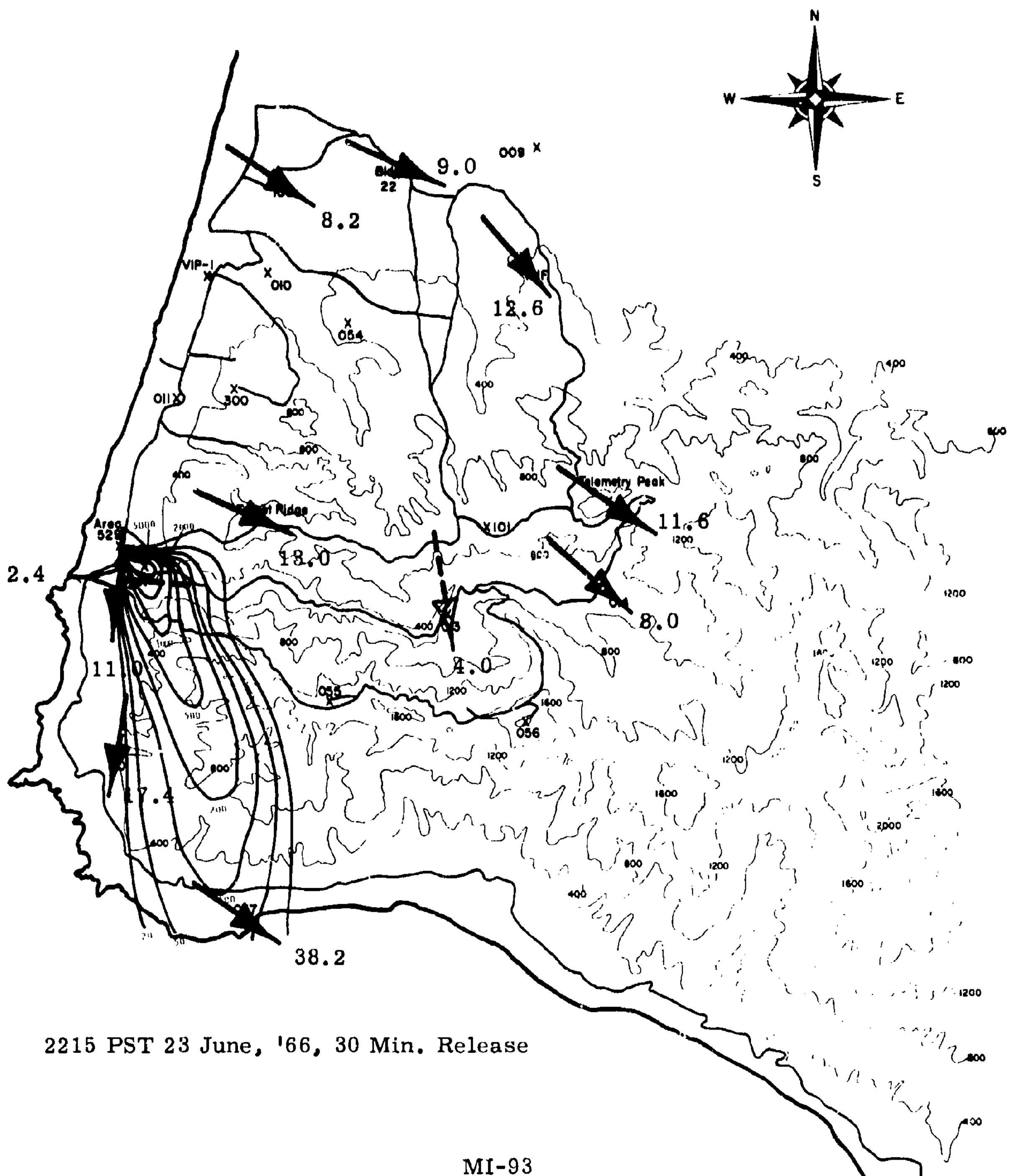
2300 PST 21 June, '66, 30 Min. Release



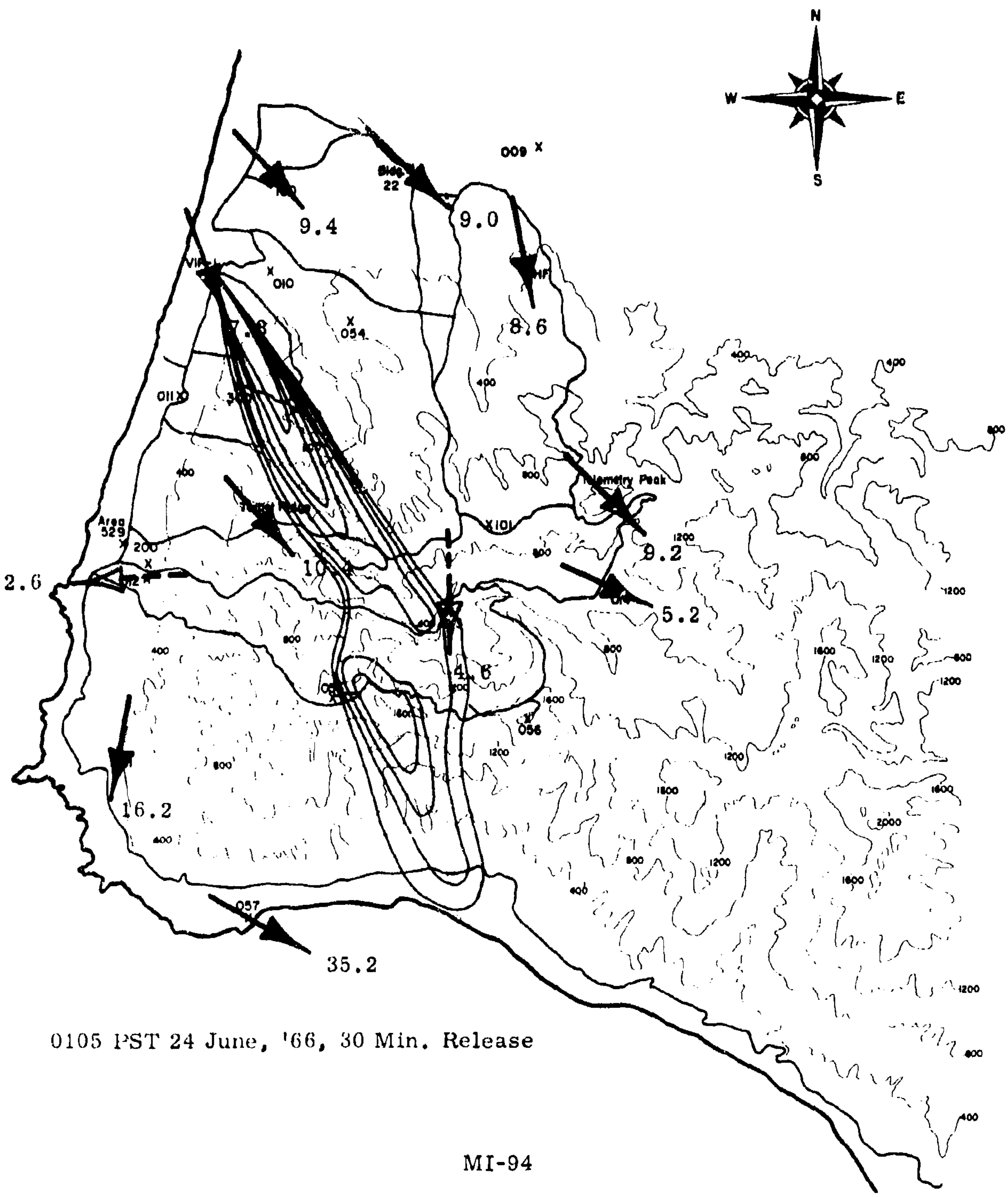
0203 PST 22 June, '66, 30 Min. Release



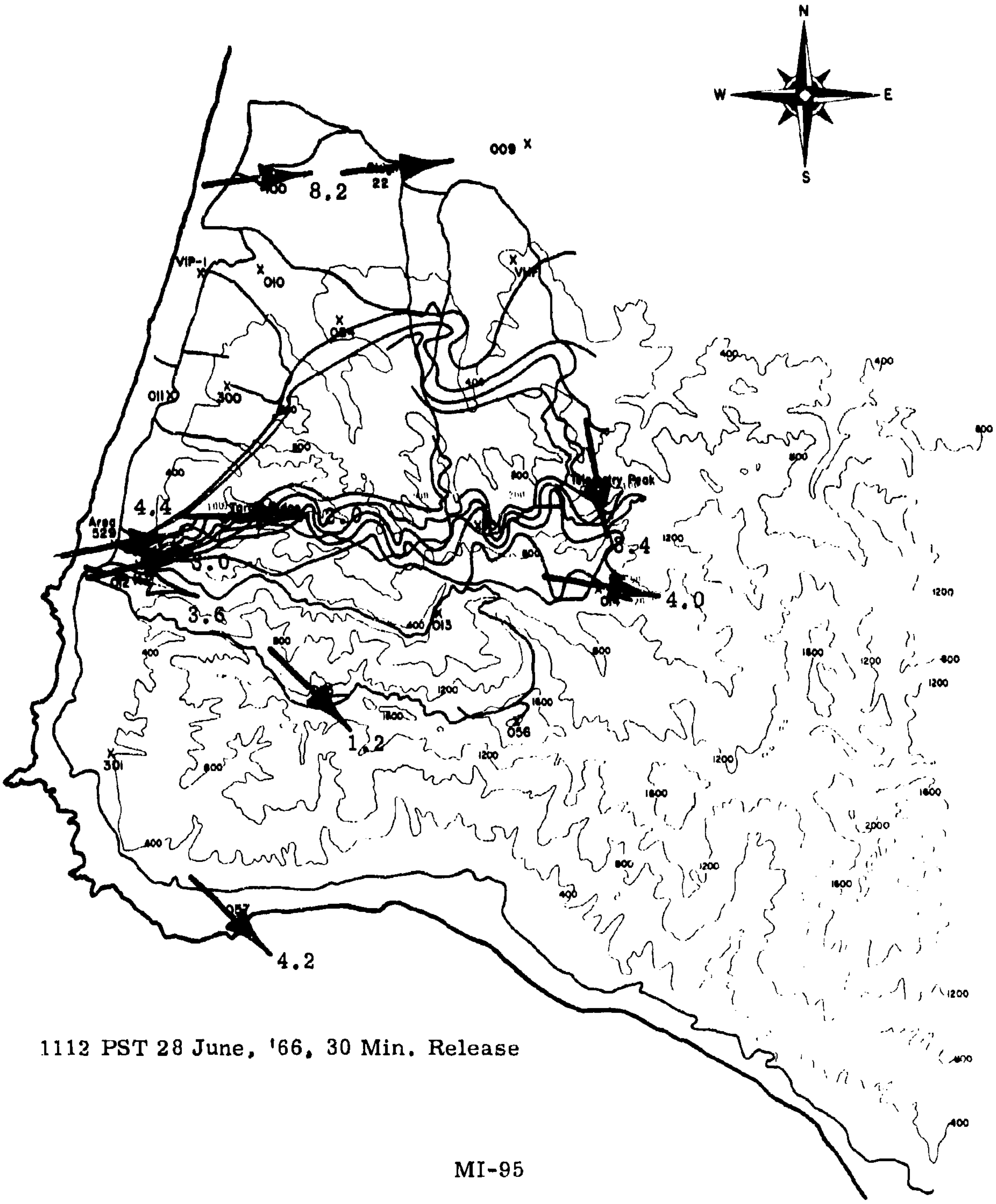
2305 PST 22 June, '66, 30 Min. Release



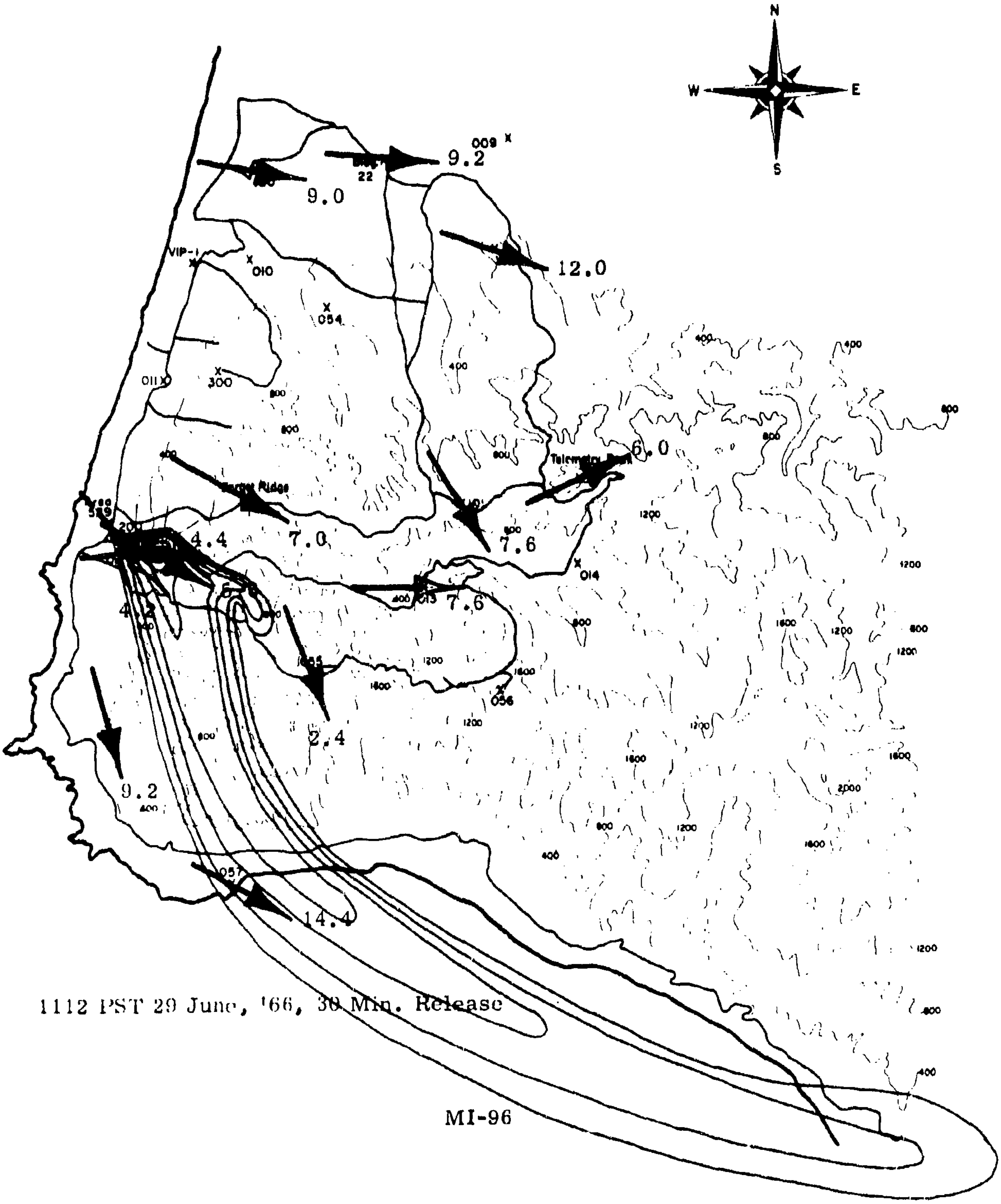
2215 PST 23 June, '66, 30 Min. Release



0105 PST 24 June, '66, 30 Min. Release

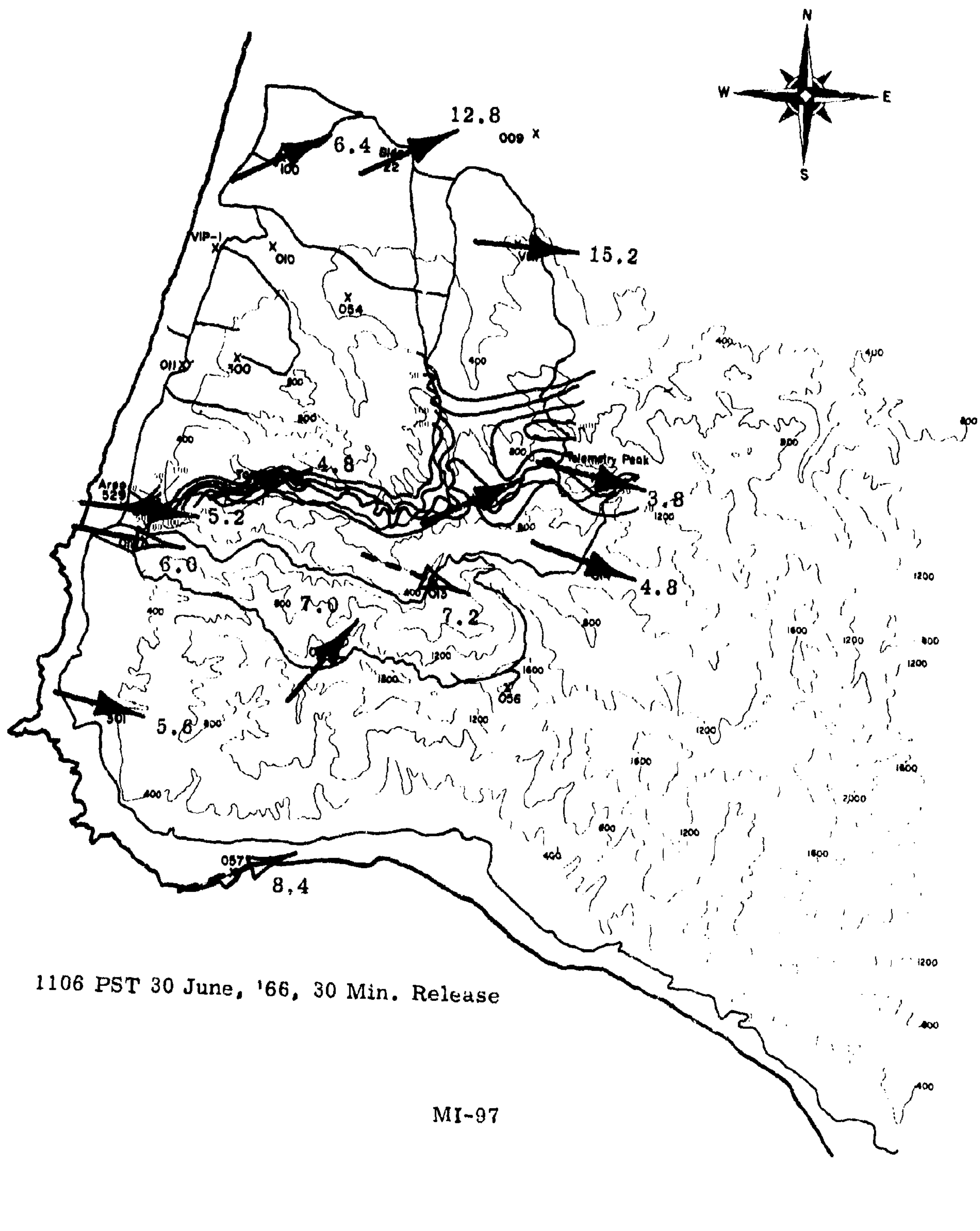


1112 PST 28 June, '66, 30 Min. Release

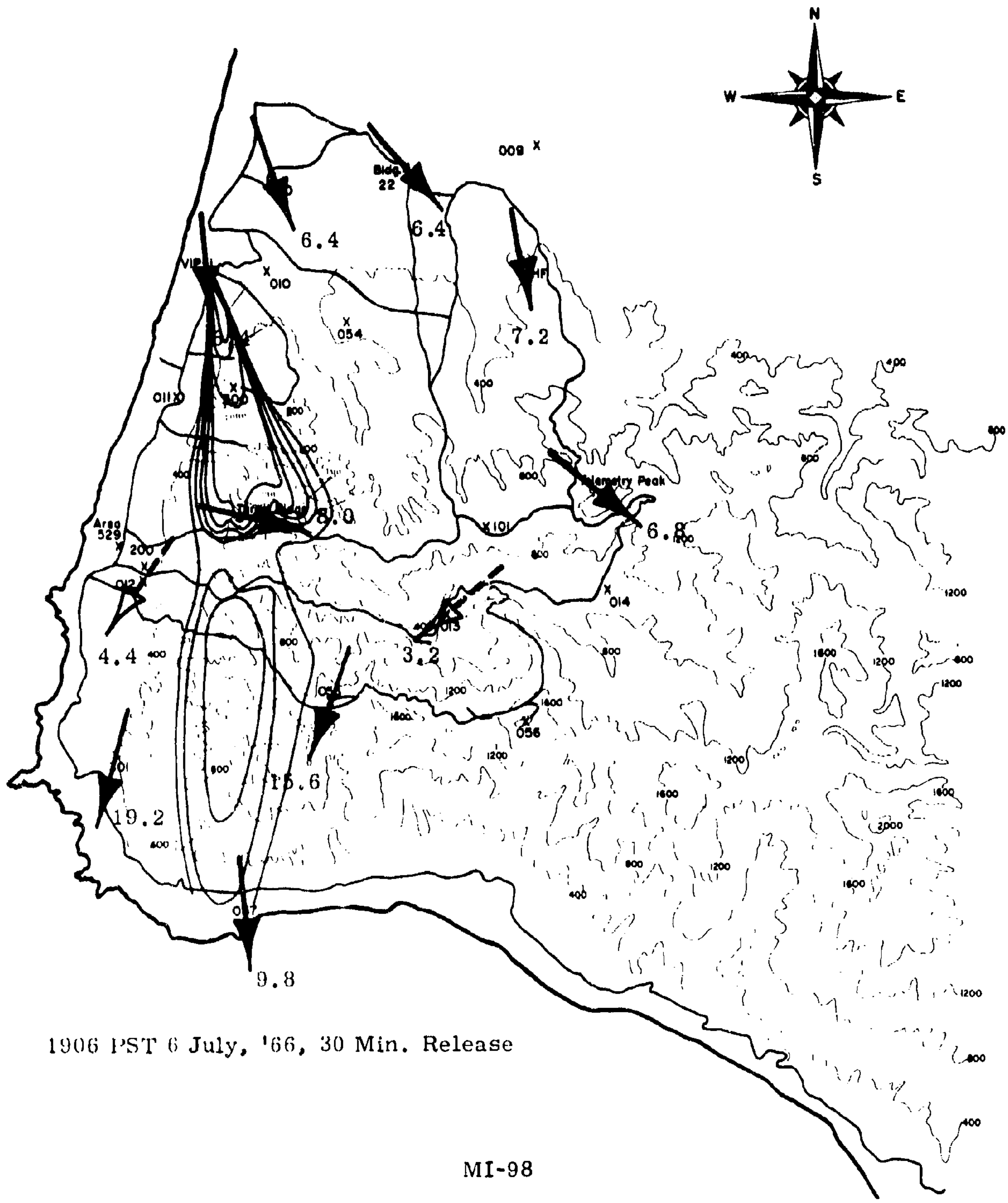


1112 PST 29 June, '66, 30 Min. Release

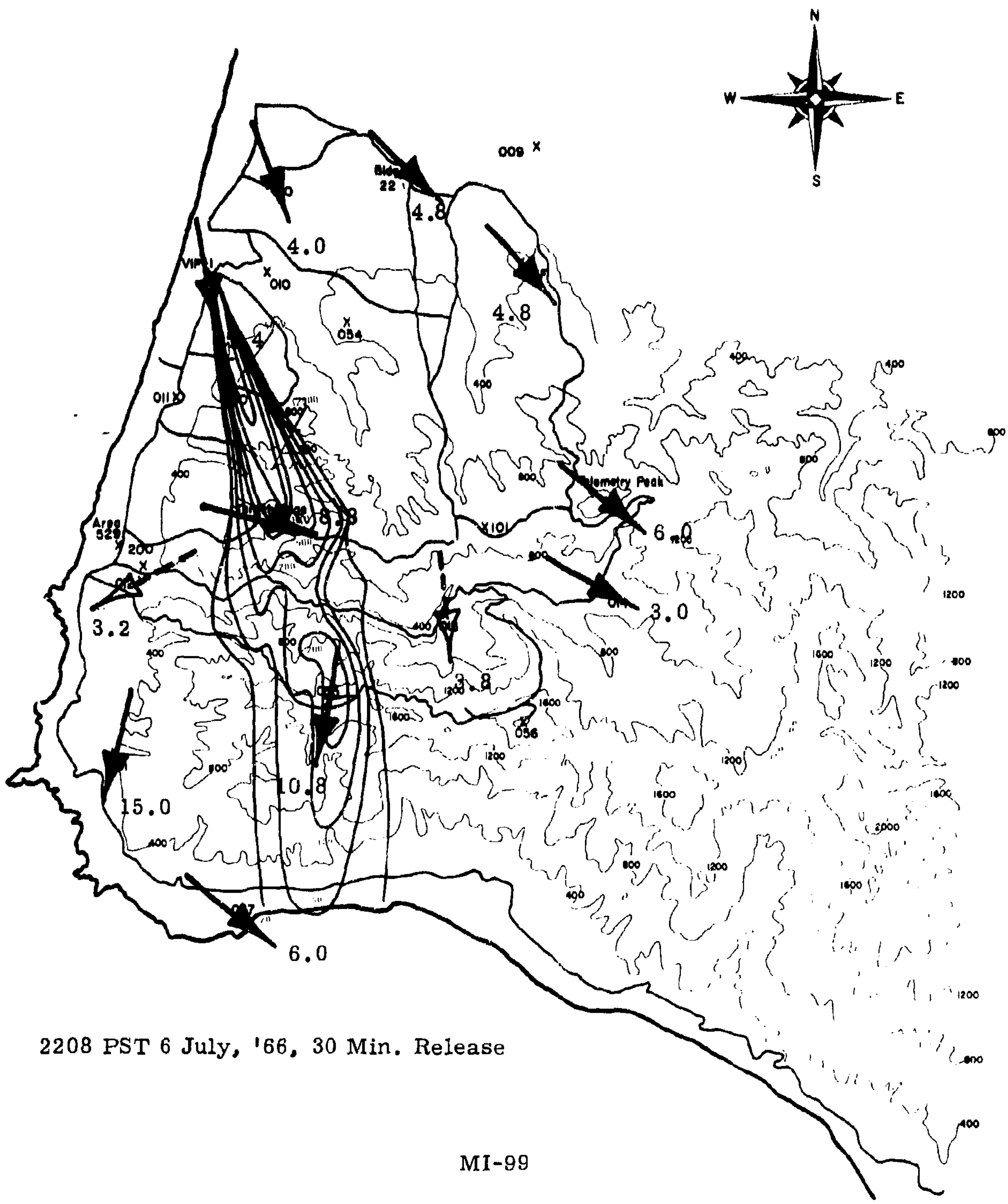
MI-96



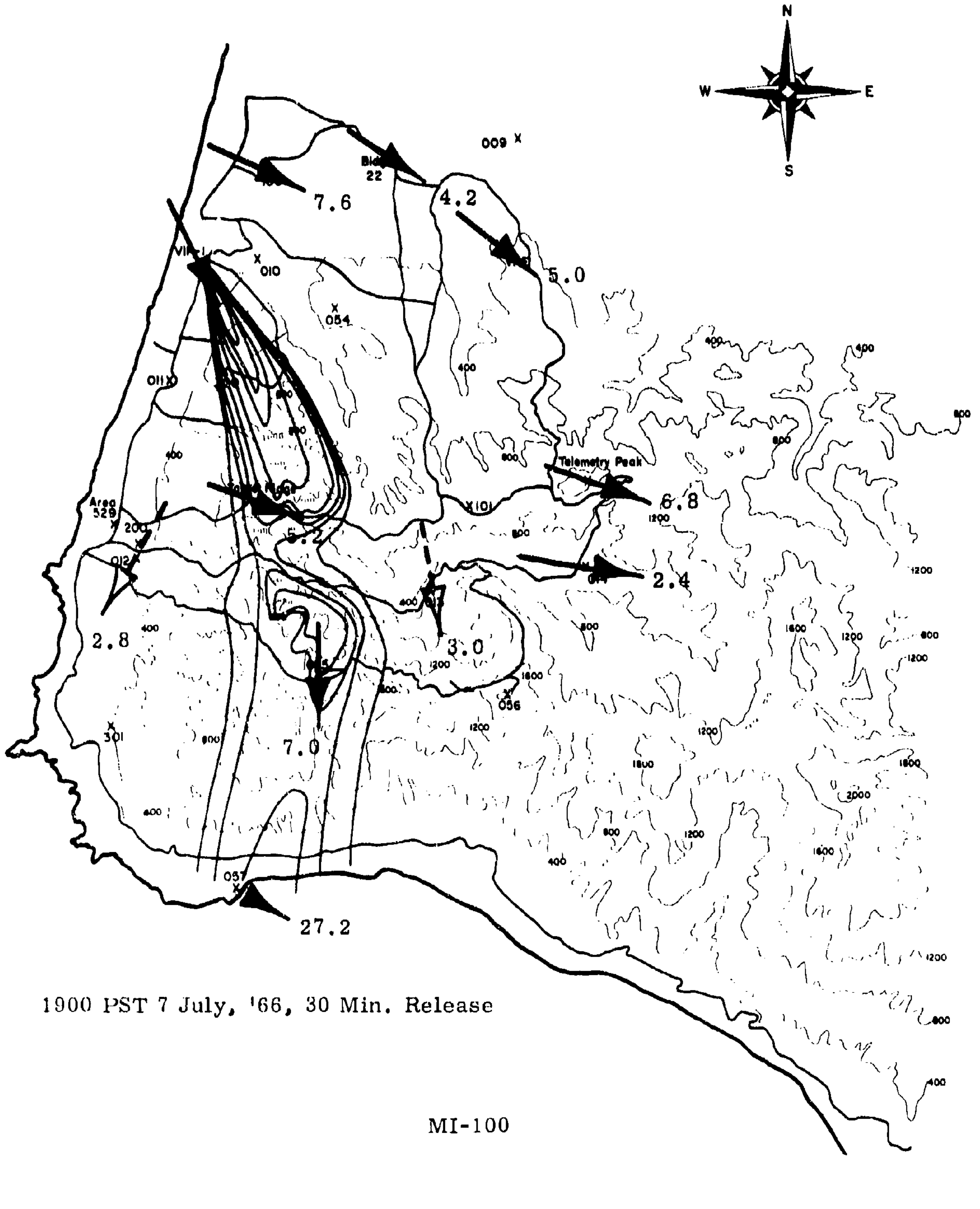
1106 PST 30 June, '66, 30 Min. Release



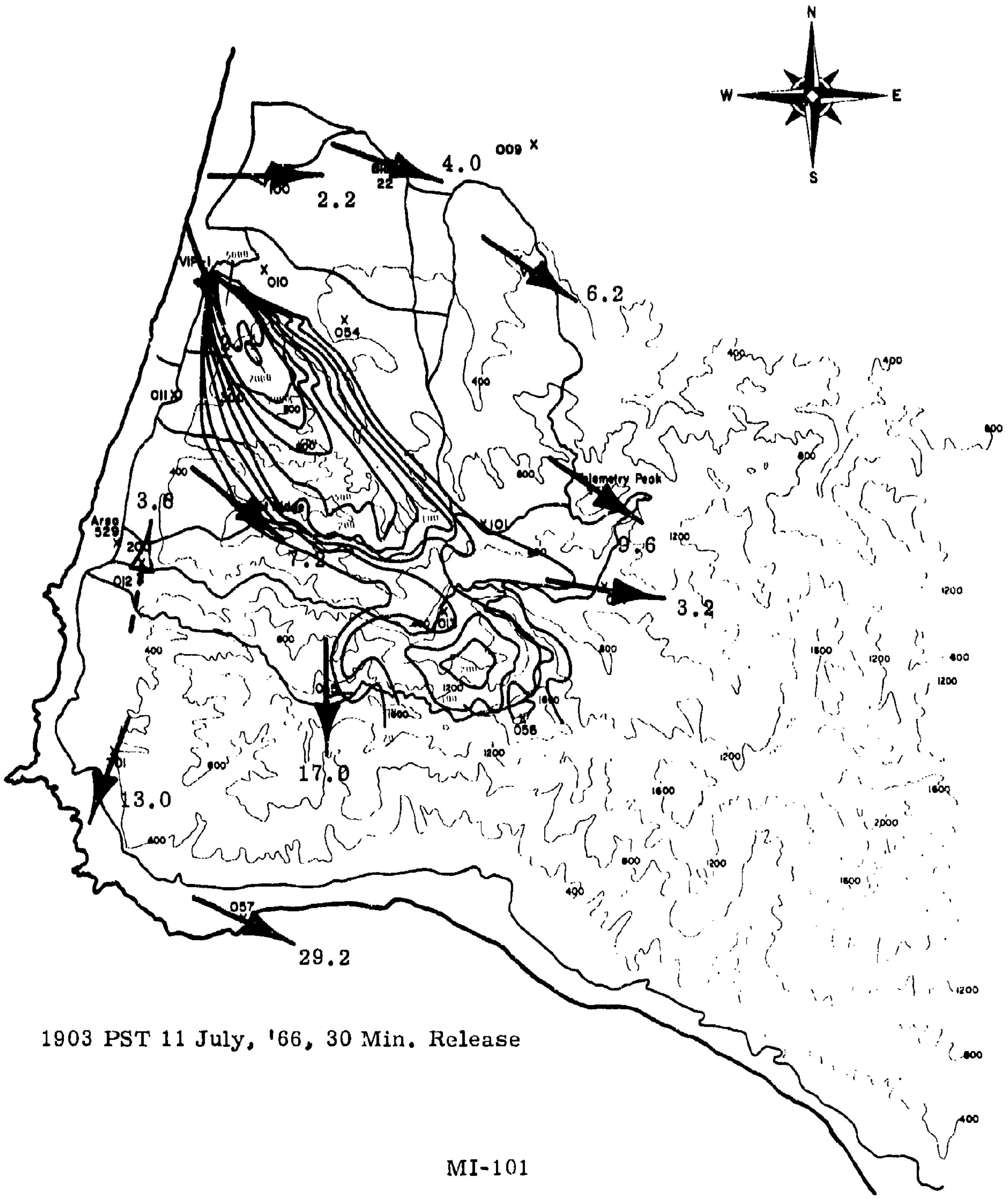
1906 PST 6 July, '66, 30 Min. Release



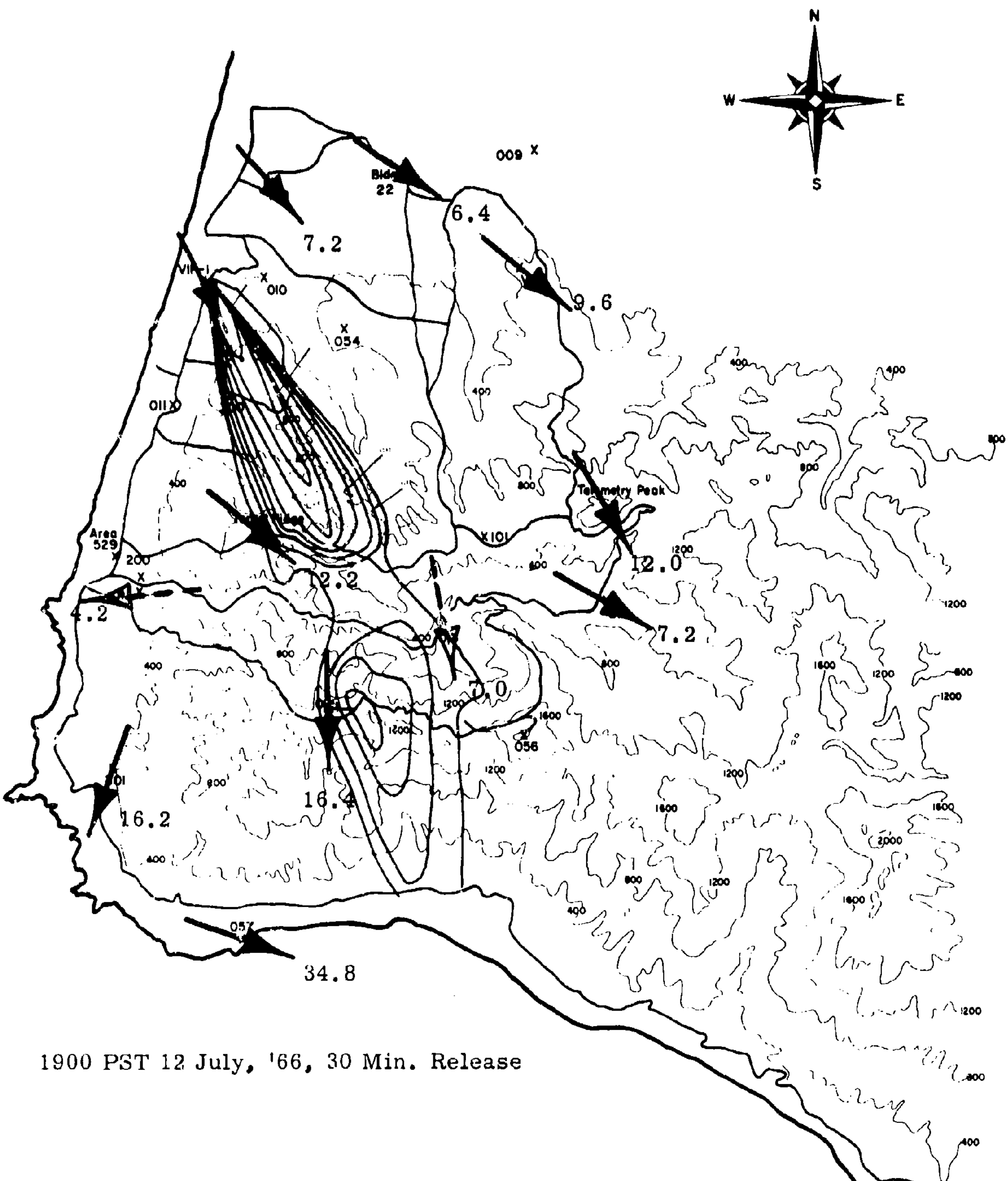
2208 PST 6 July, '66, 30 Min. Release



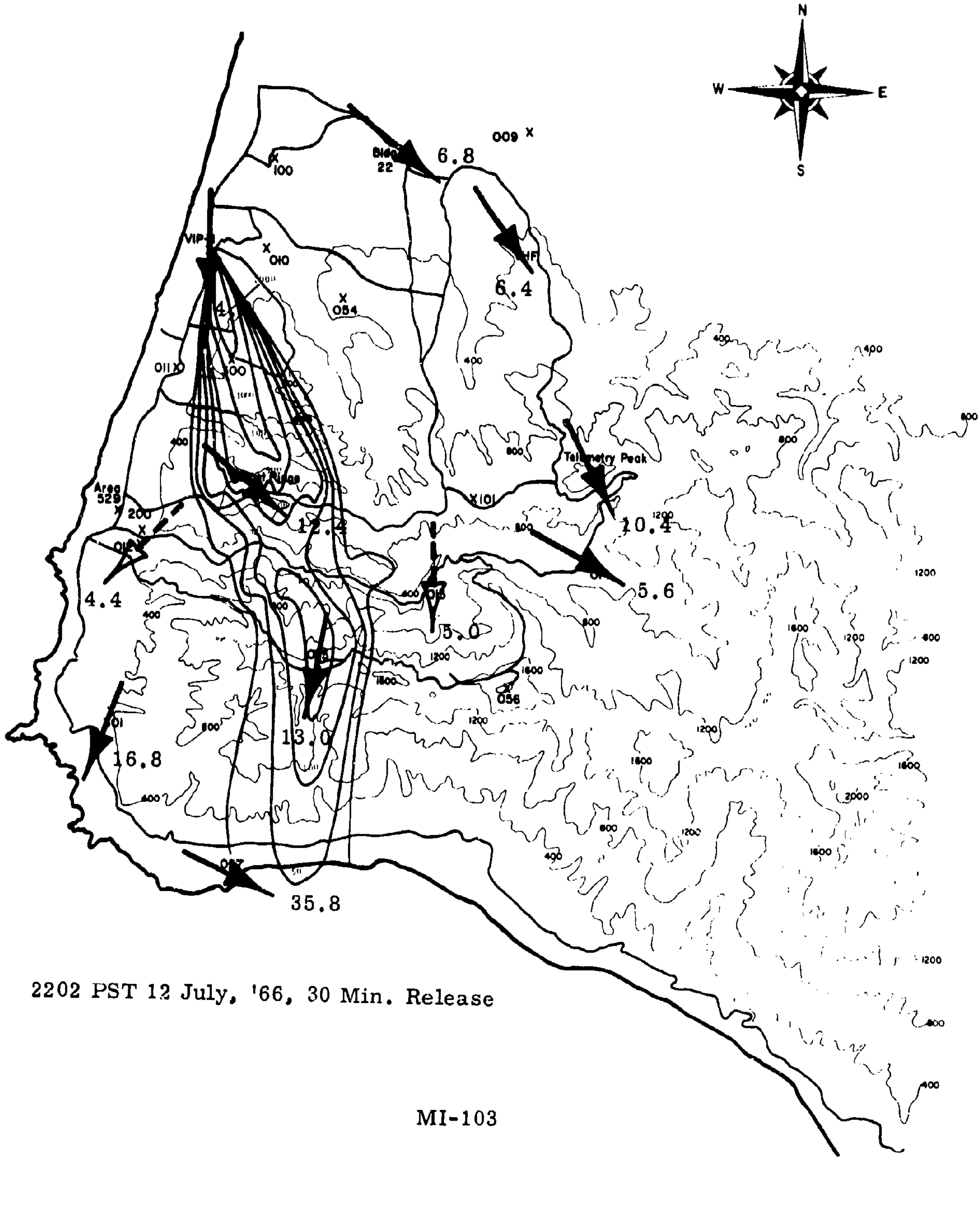
1900 PST 7 July, '66, 30 Min. Release



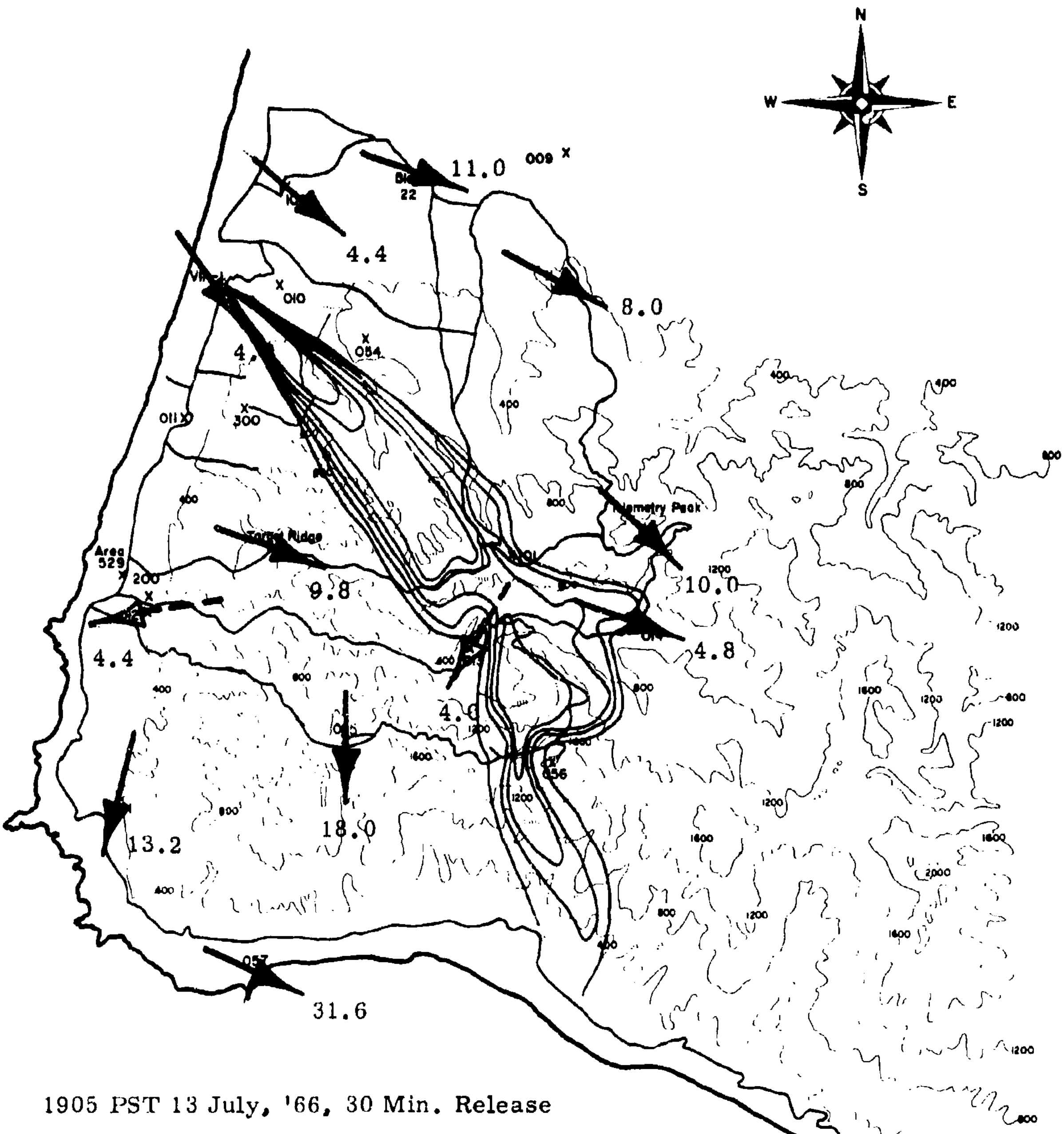
1903 PST 11 July, '66, 30 Min. Release



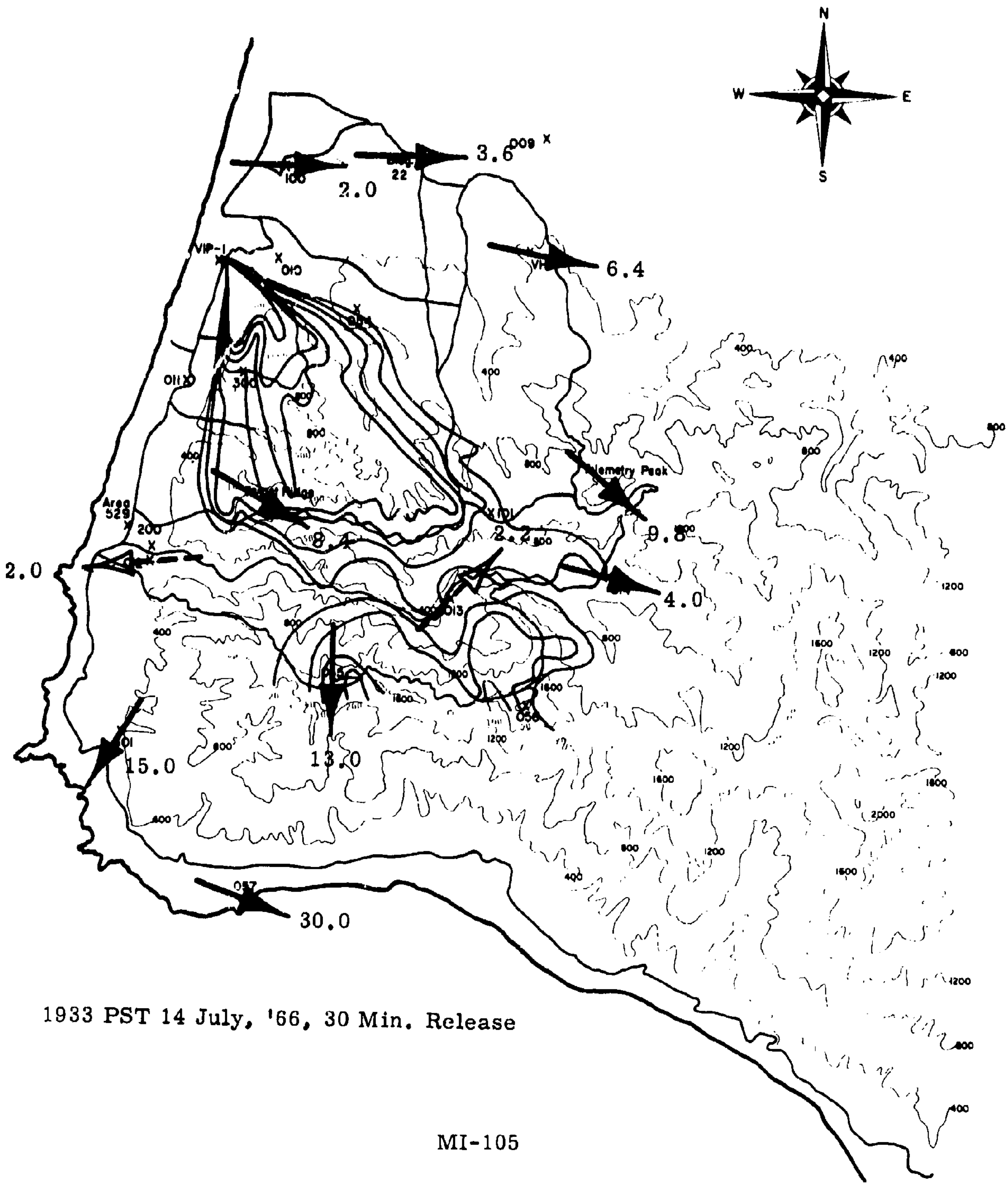
1900 PST 12 July, '66, 30 Min. Release



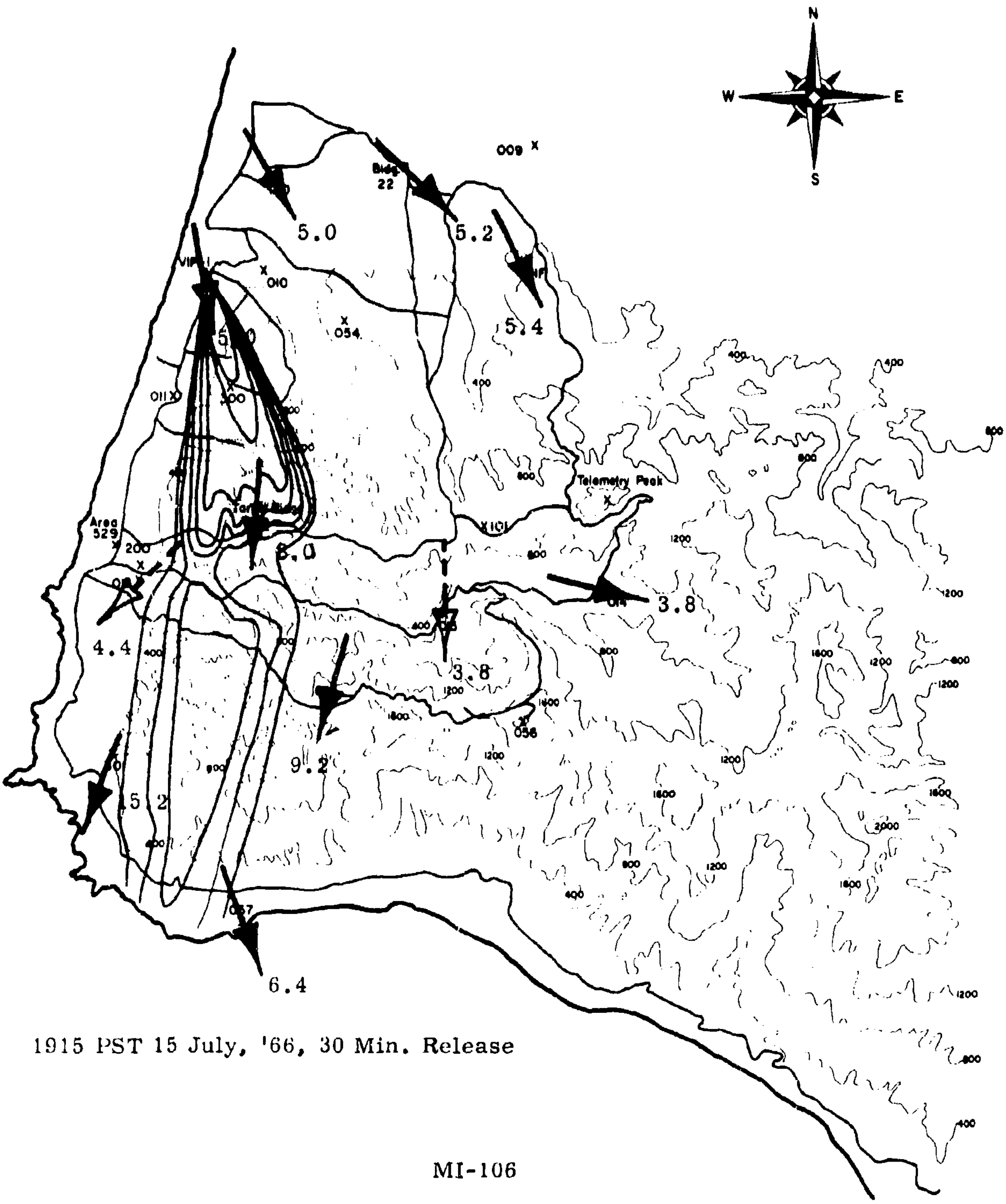
2202 PST 12 July, '66, 30 Min. Release



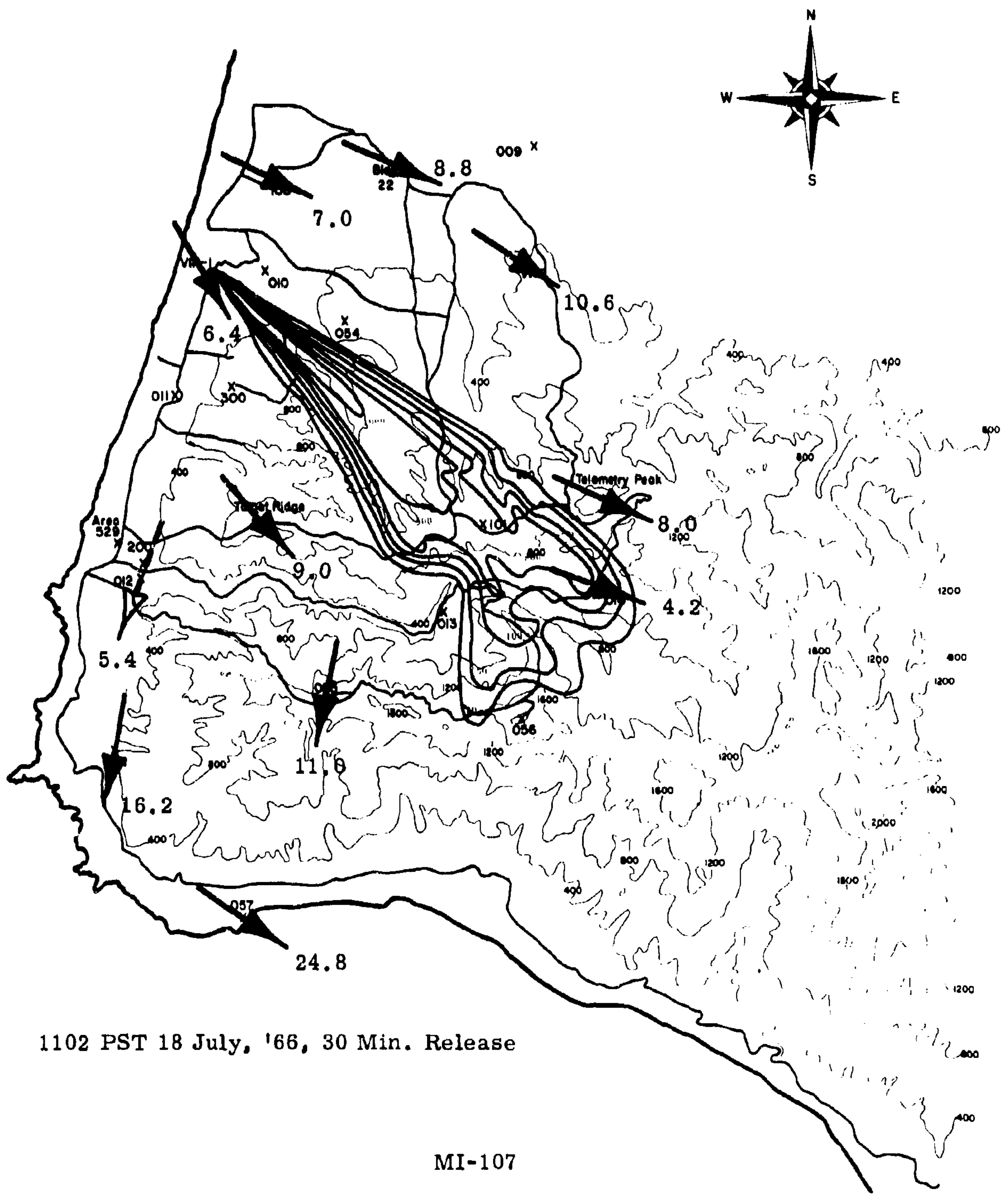
1905 PST 13 July, '66, 30 Min. Release



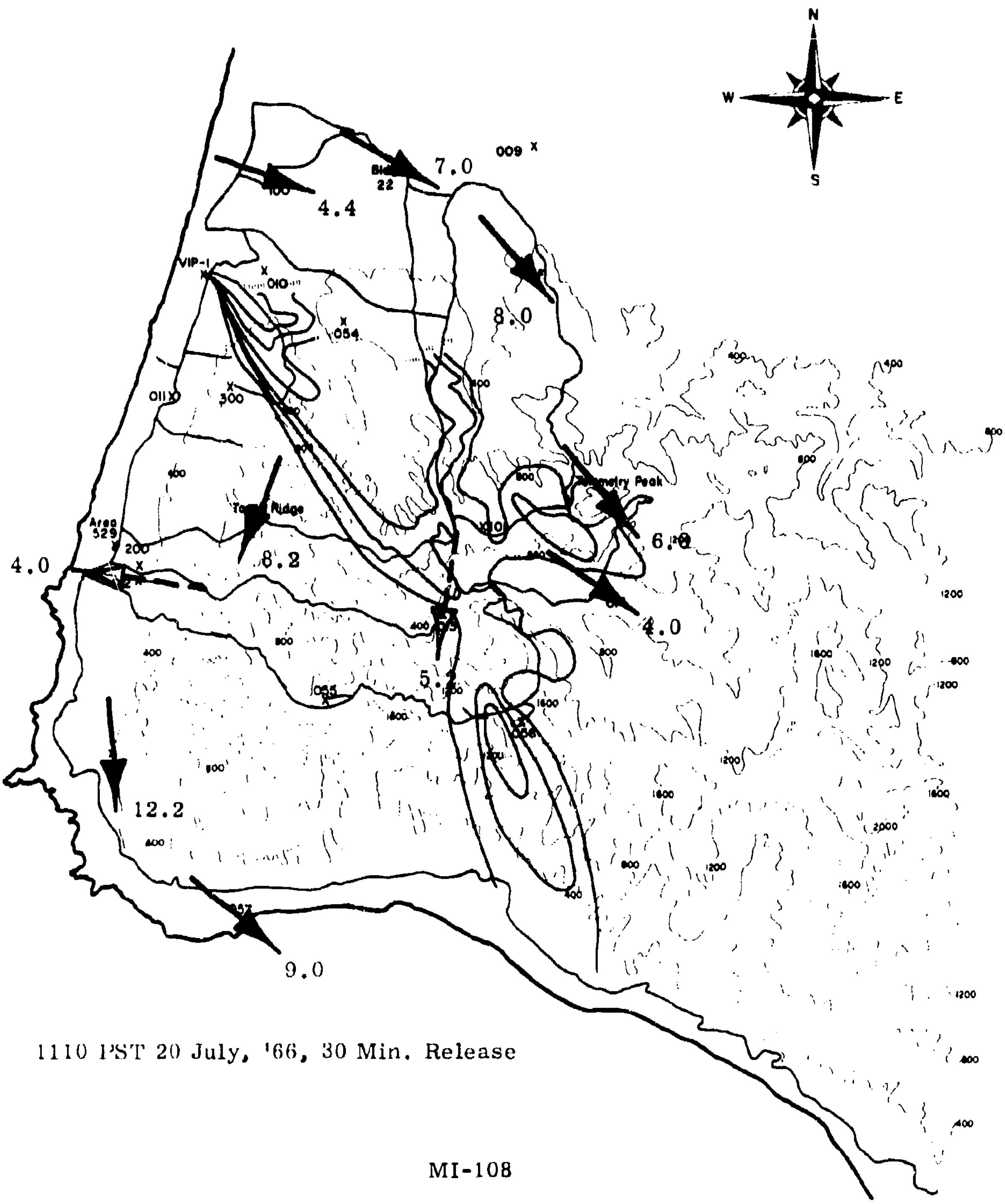
1933 PST 14 July, '66, 30 Min. Release



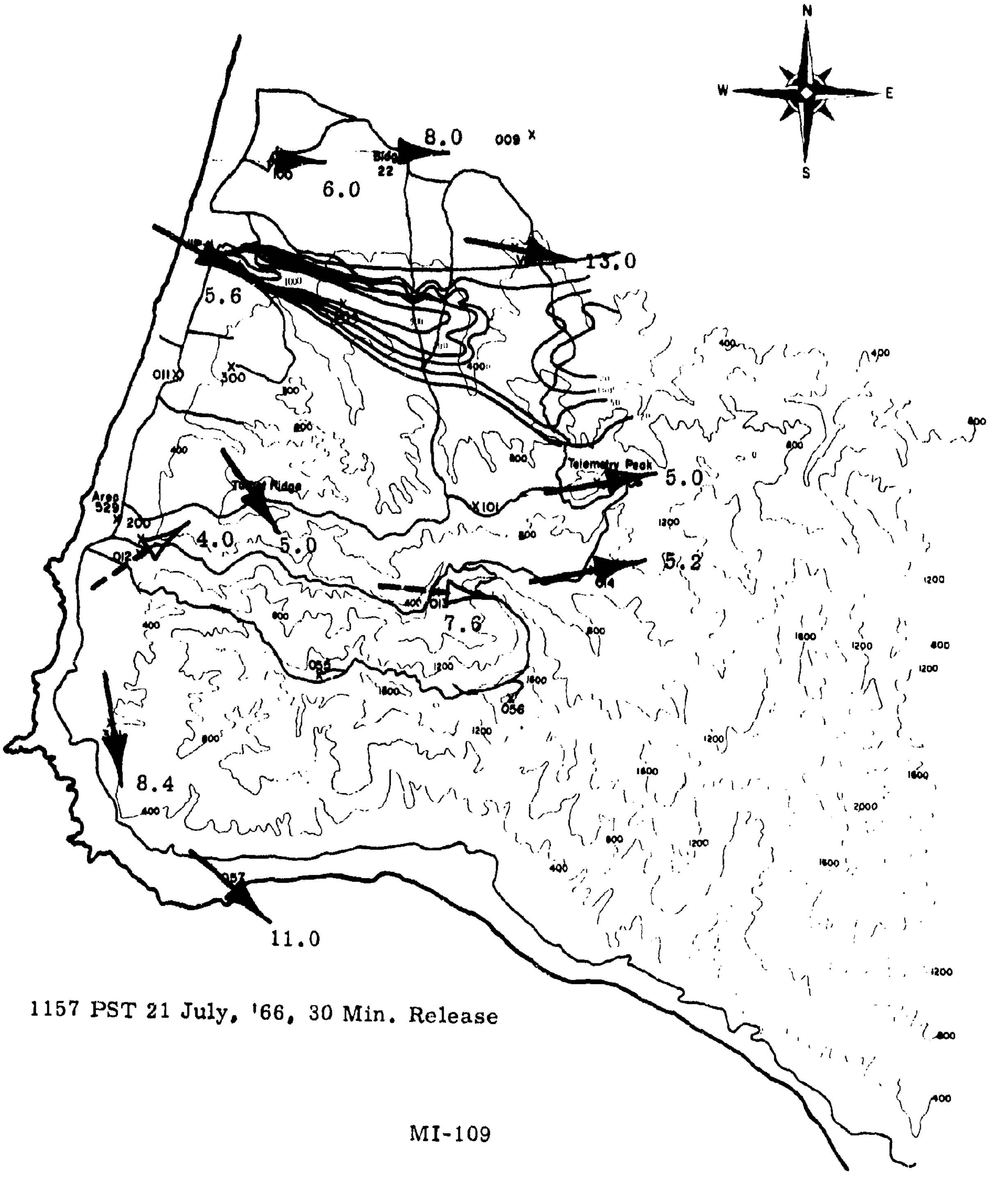
1915 PST 15 July, '66, 30 Min. Release



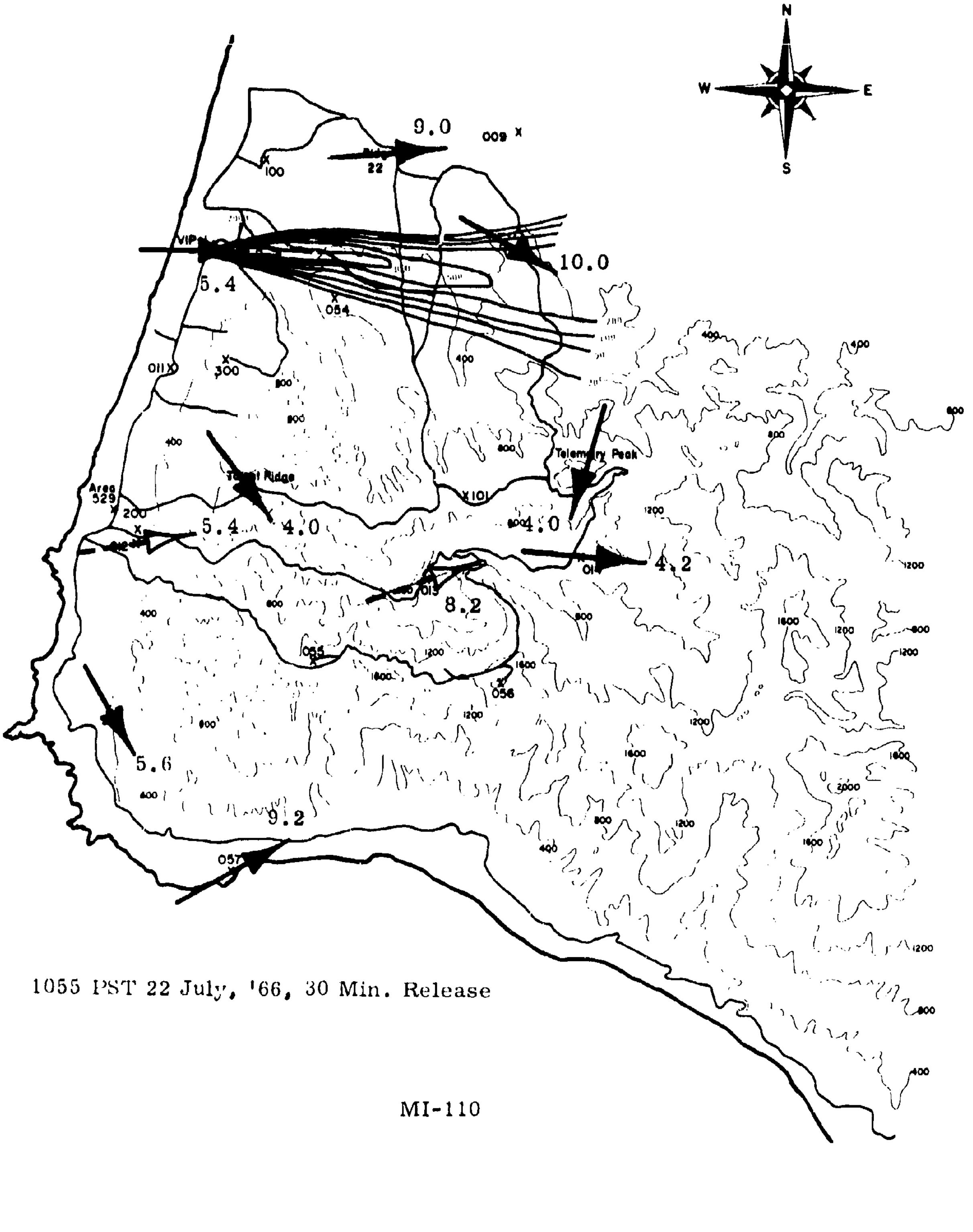
1102 PST 18 July, '66, 30 Min. Release



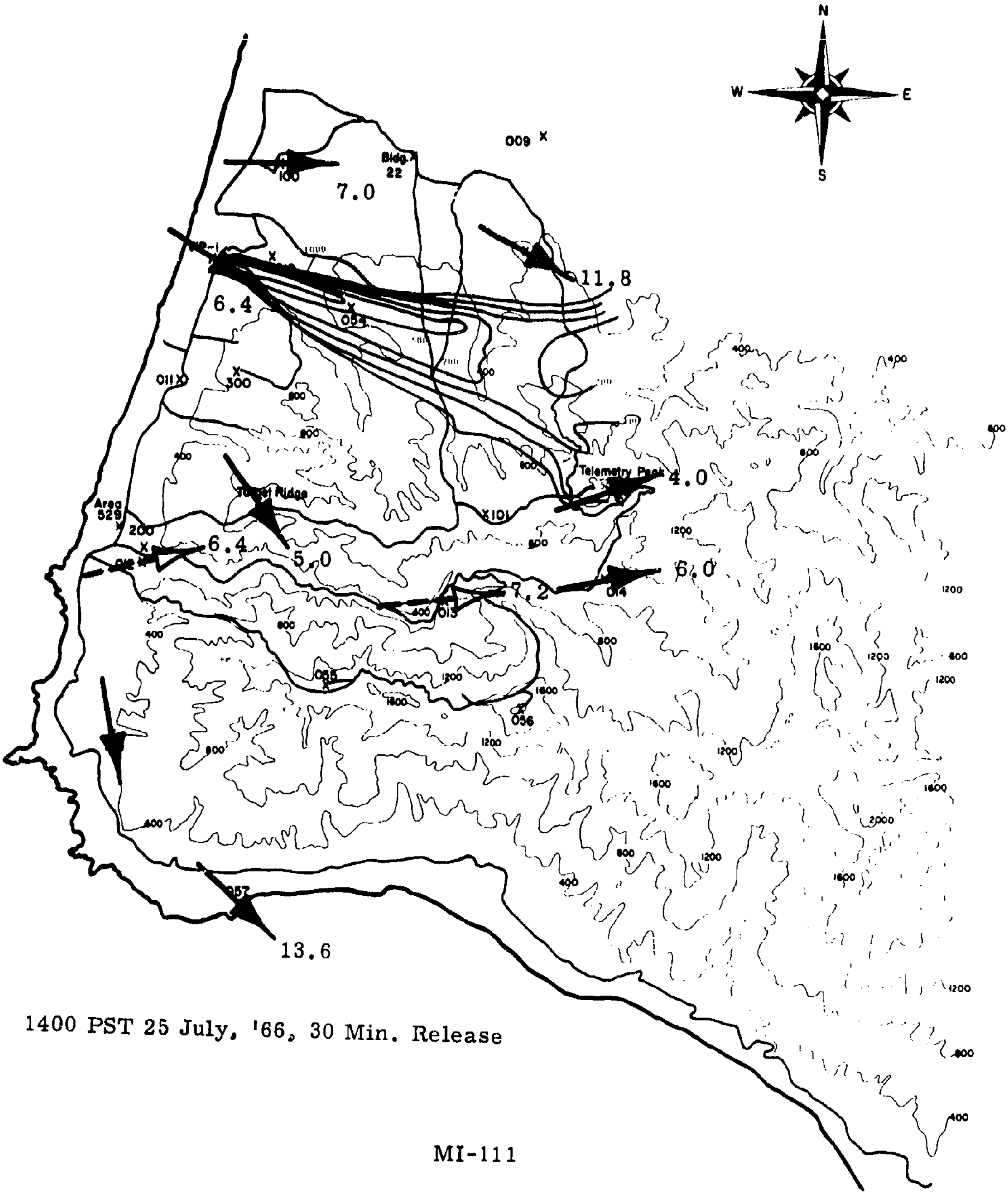
1110 PST 20 July, '66, 30 Min. Release



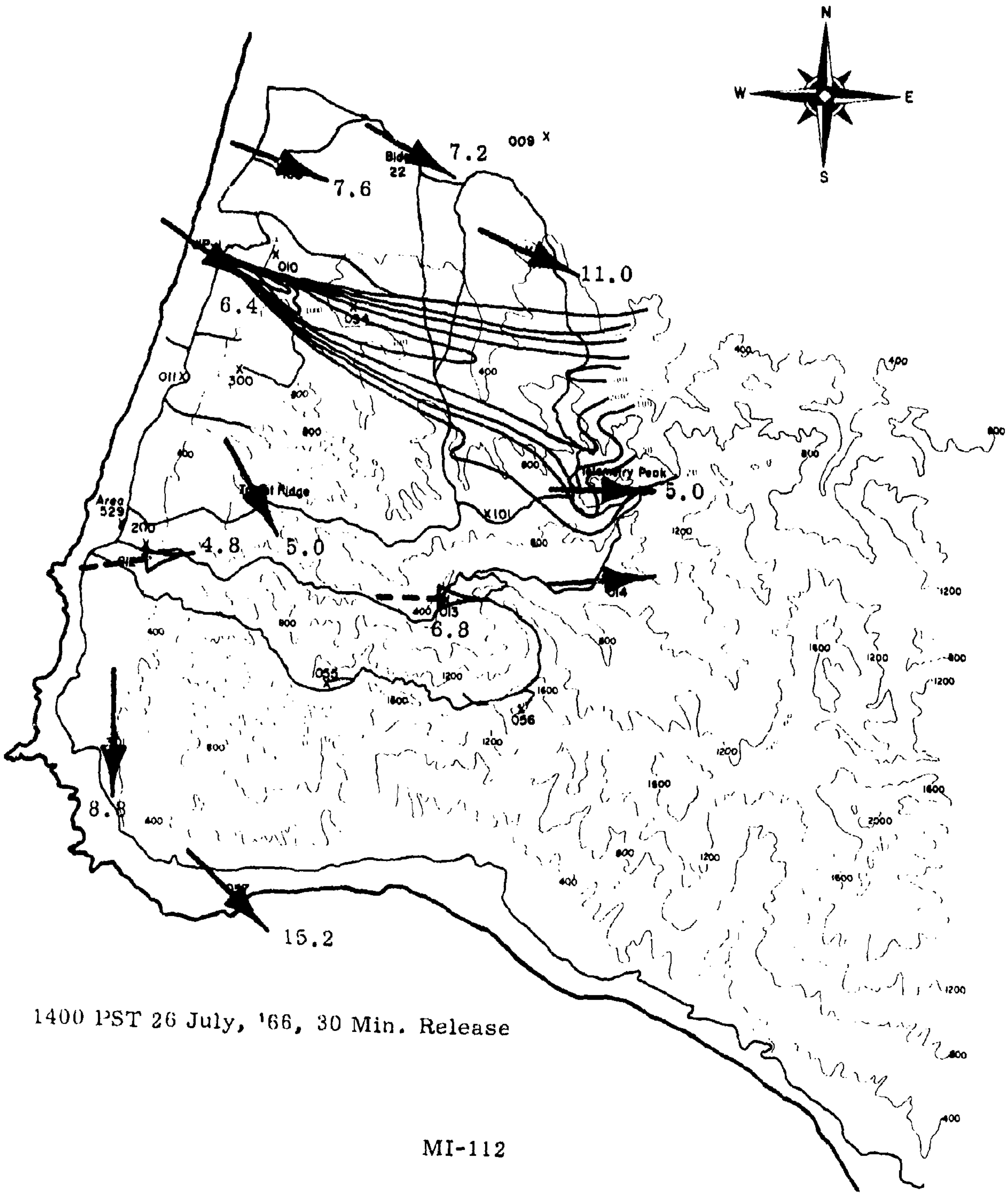
1157 PST 21 July, '66, 30 Min. Release



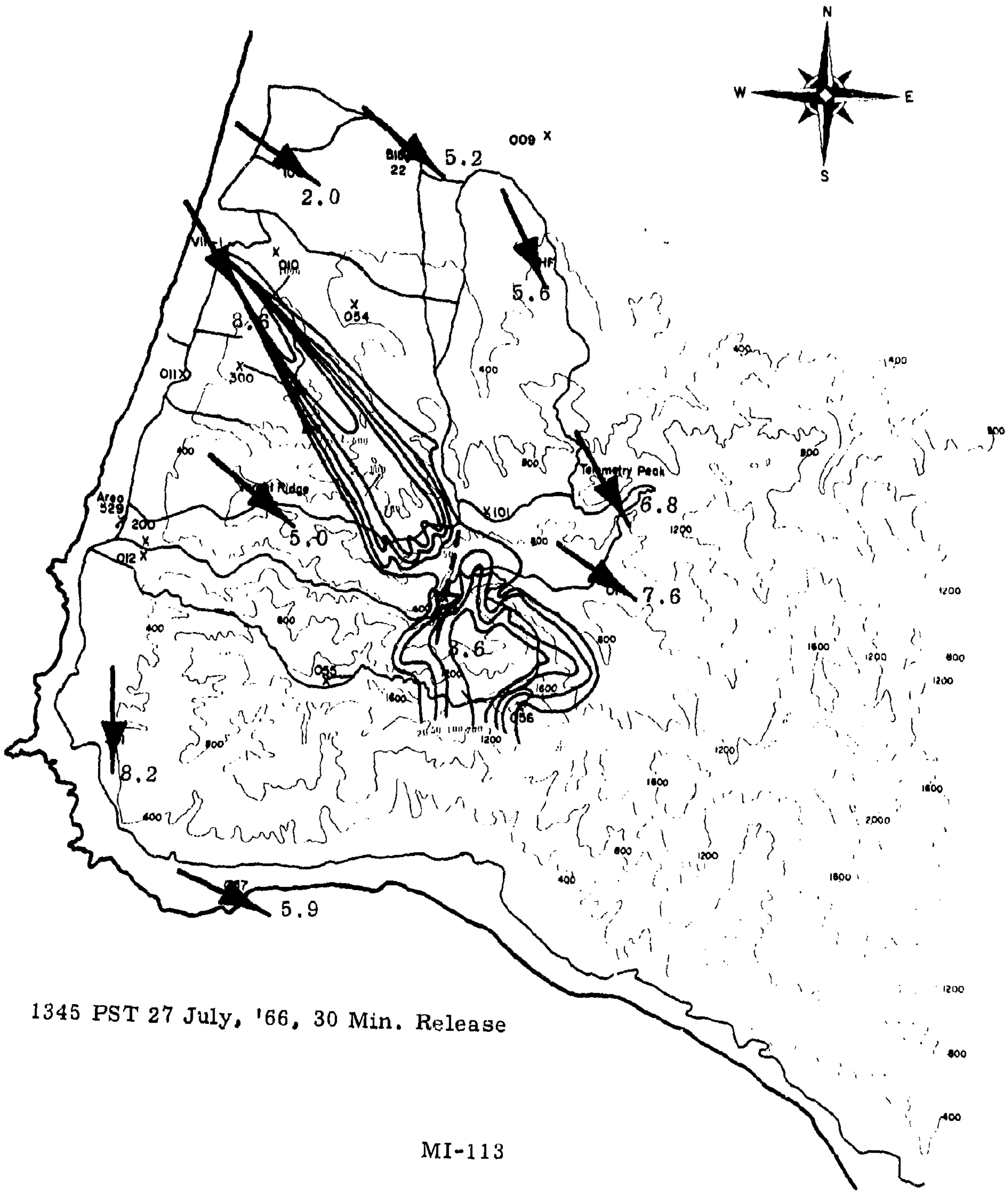
1055 PST 22 July, '66, 30 Min. Release



1400 PST 25 July, '66, 30 Min. Release



1400 PST 26 July, '66, 30 Min. Release



1345 PST 27 July, '66, 30 Min. Release

APPENDIX B

MONTHLY AVERAGE SURFACE WINDS

SITE 20 PAD D, SURFACE JAN. 1966

TIME	WIND SPEED (KNOTS) AVG	MAX	MAX DIR	CALM	DIRECTION PERCENTAGE DISTRIBUTION VAR	N	NE	E	SE	S	SW	W	NW
0000-0030	8	13	E N NE	0	0	22	22	39	6	6	0	6	0
0030-0100	8	13	E NE	0	0	21	32	32	5	5	0	0	5
0100-0130	7	13	W NE	0	0	22	33	33	6	6	0	0	0
0130-0200	6	18	E	0	6	17	33	33	6	0	6	0	0
0200-0230	8	18	SW	0	0	22	28	39	6	0	6	0	0
0230-0300	8	13	W E	0	6	17	28	39	6	0	0	6	0
0300-0330	7	18	NE	0	6	6	39	39	6	0	0	6	0
0330-0400	8	18	NE	0	0	6	39	44	6	0	0	6	0
0400-0430	8	18	W	0	0	17	17	50	11	0	0	6	0
0430-0500	8	13	E N NE	0	6	11	28	39	11	0	0	6	0
0500-0530	8	13	W W NE W	0	0	22	28	33	11	0	0	6	0
0530-0600	8	13	W NW	0	0	19	44	13	19	0	0	0	6
0600-0630	6	13	E NE	0	0	17	33	33	11	0	0	6	0
0630-0700	6	13	NE SE	0	0	17	44	22	11	0	0	6	0
0700-0730	7	13	E NE SE	0	0	11	37	42	5	0	0	5	0
0730-0800	7	18	E	0	6	6	39	39	6	0	0	6	0
0800-0830	6	13	W NE SE	0	0	11	33	33	11	0	0	6	6
0830-0900	6	13	W NE SE	0	0	22	39	22	11	0	0	6	0
0900-0930	6	13	W W SE	0	6	38	25	13	6	0	6	6	0
0930-1000	6	13	W NE SE	0	0	44	17	11	6	0	6	6	11
1000-1030	6	13	W W SE	0	6	56	6	6	6	0	6	0	17
1030-1100	6	13	W SE	0	5	53	0	0	5	0	5	5	26
1100-1130	6	13	W SE	0	0	50	0	0	6	0	11	6	28
1130-1200	7	13	W SE	0	0	50	0	0	6	0	6	6	33

SITE 20 PAD D, SURFACE JAN, 1966

TIME	WIND SPEED (KNOTS) AVG	MAX	MAX DIR	CALM	DIRECTION PERCENTAGE DISTRIBUTION VAR	N	NE	E	SE	S	SW	W	NW
1200-1230	6	13	N NE SE	0	0	41	6	0	6	0	6	6	35
1230-1300	6	13	N NE SE	0	0	29	6	0	6	0	6	18	35
1300-1330	6	13	N SE	0	12	35	0	0	6	0	0	6	41
1330-1400	7	13	N NW SE	0	6	39	6	0	6	0	0	11	33
1400-1430	7	18	N SE	0	0	39	6	0	6	0	6	11	33
1430-1500	8	18	N SE	0	0	42	0	0	5	0	5	0	47
1500-1530	8	18	SE	0	0	50	0	0	5	0	5	0	40
1530-1600	7	18	SE	0	0	60	0	0	5	0	5	0	30
1600-1630	7	18	SE	0	0	65	0	0	5	5	0	5	20
1630-1700	7	18	SE	0	0	55	10	0	5	5	0	0	25
1700-1730	7	18	SE	0	0	45	20	5	5	5	0	0	20
1730-1800	7	18	SE	0	0	60	10	5	5	5	0	0	15
1800-1830	8	18	SE	0	0	58	11	11	5	5	0	0	11
1830-1900	8	18	SE	0	0	63	0	16	5	0	5	0	11
1900-1930	8	18	SE	0	0	42	16	16	5	5	0	0	16
1930-2000	8	13	N NE S	0	0	42	11	21	0	11	0	0	16
2000-2030	8	18	N NE	0	0	42	16	16	0	11	0	0	16
2030-2100	8	18	N	0	0	37	21	16	5	5	0	5	11
2100-2130	8	18	NE	0	0	37	26	16	0	5	5	5	5
2130-2200	8	13	N NE	0	6	50	17	17	0	6	0	0	6
2200-2230	7	18	NE	0	0	21	37	26	5	0	0	5	5
2230-2300	7	13	E N NE	0	5	26	37	21	5	0	0	5	0
2300-2330	6	13	E N NE	0	6	28	39	22	6	0	0	0	0
2330-2400	6	13	E N NE	0	0	26	37	26	11	0	0	0	0

SITE 20 PAD D, SURFACE JAN, 1966

TIME	WIND SPEED (KNOTS) AVG	MAX	MAX DIR	CALM	DIRECTION PERCENTAGE DISTRIBUTION VAR	N	NE	E	SE	S	SW	W	NW
0000-0100	8	13	E N NE	0	0	22	27	35	5	5	0	3	3
0100-0200	8	18	E	0	3	19	33	33	6	3	3	0	0
0200-0300	8	18	SW	0	3	19	28	39	6	0	3	3	0
0300-0400	8	18	NE	0	3	6	39	42	6	0	0	6	0
0400-0500	8	18	N	0	3	14	22	44	11	0	0	6	0
0500-0600	8	13	N NE W	0	0	21	35	24	15	0	0	3	3
0600-0700	6	13	NW E NE SE	0	0	17	39	28	11	0	0	6	0
0700-0800	7	18	E	0	3	8	38	41	5	0	0	5	0
0800-0900	6	13	N NE SE	0	0	17	36	28	11	0	0	6	3
0900-1000	6	13	W N SE NE	0	3	41	21	12	6	0	6	6	6
1000-1100	6	13	W N SE	0	5	54	3	3	5	0	5	3	22
1100-1200	6	13	N SE	0	0	50	0	0	6	0	8	6	31
1200-1300	6	13	N NE SE	0	0	35	6	0	6	0	6	12	35
1300-1400	7	13	N SE NW	0	9	37	3	0	6	0	0	9	37
1400-1500	7	18	N SE	0	0	41	3	0	5	0	5	5	41
1500-1600	8	18	SE	0	0	55	0	0	5	0	5	0	35
1600-1700	7	18	SE	0	0	60	5	0	5	5	0	2	22
1700-1800	7	18	SE	0	0	52	15	5	5	5	0	0	17
1800-1900	8	18	SE	0	0	61	5	13	5	3	3	0	11
1900-2000	8	18	SE	0	0	42	13	18	3	8	0	0	16
2000-2100	8	18	N NE	0	0	39	18	15	3	8	0	3	13
2100-2200	8	18	NE	0	3	43	22	16	0	5	3	3	5
2200-2300	7	18	NE	0	3	24	37	24	5	0	0	5	3
2300-2400	6	13	E N NE	0	3	27	38	24	8	0	0	0	0

SITE 20 PAD D, SURFACE JAN, 1966

TIME	WIND SPEED (KNOTS) AVG	MAX	MAX DIR	DIRECTION PERCENTAGE DISTRIBUTION CALM	VAR	N	NE	E	SE	S	SW	W	NW
0000-0200	8	18	E	0	1	21	30	34	5	4	1	1	1
0200-0400	8	18	SW NE	0	3	13	33	40	6	0	1	4	0
0400-0600	8	18	N	0	1	17	29	34	13	0	0	4	1
0600-0800	6	18	E	0	1	12	38	34	8	0	0	5	0
0800-1000	6	13	N NE SE	0	1	29	29	20	9	0	3	6	4
1000-1200	6	13	W N SE	0	3	52	1	1	5	0	7	4	26
1200-1400	6	13	N NE SE	0	4	36	4	8	6	0	3	10	36
1400-1600	7	18	NW N SE	0	0	48	1	0	5	0	5	3	38
1600-1800	7	18	SE	0	0	56	10	2	5	5	0	1	20
1800-2000	8	18	SE	0	0	51	9	16	4	5	1	0	13
2000-2200	8	18	N NE	0	1	41	20	16	1	7	1	3	9
2200-2400	7	18	NE	0	3	25	37	24	7	0	0	3	1

SITE 20 PAD D, SURFACE JAN. 1966

TIME	WIND SPEED (KNOTS) AVG	MAX	MAX DIR	CALM	DIRECTION PERCENTAGE DISTRIBUTION VAR	N	NE	E	SE	S	SW	W	NW
0000-0300	8	18	E SW	0	2	20	29	36	6	3	2	2	1
0300-0600	8	18	NE N	0	2	13	32	37	10	0	0	5	1
0600-0900	6	18	E	0	1	14	38	32	9	0	0	6	1
0900-1200	6	13	N SE NE	0	3	49	7	5	6	0	7	5	20
1200-1500	7	18	W V SE	0	3	38	4	0	6	0	4	8	38
1500-1800	7	18	SE	0	0	56	7	2	5	3	2	1	25
1800-2100	8	18	SE N NE	0	0	47	12	16	4	6	1	1	13
2100-2400	7	18	NE	0	3	31	32	21	4	2	1	3	3

SITE 20 PAD D, SURFACE JAN, 1966

TIME	WIND SPEED (KNOTS) AVG	MAX	MAX DIR	CALM	DIRECTION PERCENTAGE DISTRIBUTION VAR	N	NE	E	SE	S	SW	W	NW
0000-0400	8	18	E SW NE	0	2	17	32	37	6	2	1	3	1
0400-0800	7	18	N E	0	1	15	34	34	10	0	0	5	1
0800-1200	6	13	N NE SE	0	2	41	15	10	7	0	5	5	15
1200-1600	7	18	N SE	0	2	42	3	0	5	0	4	6	37
1600-2000	7	18	SE	0	0	54	10	9	4	5	1	1	17
2000-2400	7	18	N NE	0	2	33	29	20	4	3	1	3	5

SITE 20 PAD D, SURFACE JAN,1966

TIME	WIND SPEED (KNOTS) AVG	MAX	MAX DIR	CALM	DIRECTION VAR	N	NE	PERCENTAGE E	SE	DISTRIBUTION S	SW	W	NW
0000-0600	8	18	E SW NE N	0	2	17	31	36	8	1	1	3	1
0600-1200	6	15	E	0	2	31	23	19	7	0	3	5	10
1200-1800	7	18	N SE	0	1	47	5	1	5	2	3	4	31
1800-2400	8	18	SE N NE	0	1	39	22	19	4	4	1	2	8

SITE 40 VHF JAN, 1966

TIME	WIND SPEED (KNOTS) AVG	MAX	MAX DIR	CALM	DIRECTION VAR	N	NE	PERCENTAGE E	SE	DISTRIBUTION S	SW	W	NW
0000-0030	6	14	V SE	0	19	5	5	33	24	0	10	5	0
0030-0100	7	14	V SE	0	14	10	10	29	33	0	5	0	0
0100-0130	7	20	V	0	19	5	10	10	38	5	14	0	0
0130-0200	8	20	V	0	10	10	14	10	43	0	14	0	0
0200-0230	7	14	V V SE	0	19	5	10	24	29	5	0	5	5
0230-0300	6	14	NE V	0	10	0	10	14	48	0	14	5	0
0300-0330	7	20	S	0	14	0	10	19	38	5	5	0	10
0330-0400	6	14	E V SE	0	14	5	5	24	33	0	10	0	10
0400-0430	6	20	V	0	10	0	14	14	38	5	10	5	5
0430-0500	7	20	V	0	14	10	14	10	38	5	10	0	0
0500-0530	6	20	V	0	19	14	5	5	43	0	10	5	0
0530-0600	7	26	V	0	24	5	5	14	43	0	5	0	5
0600-0630	6	26	V	0	24	0	10	24	33	0	5	0	5
0630-0700	7	26	V	0	19	14	10	14	33	5	5	0	0
0700-0730	7	26	V	0	29	5	10	19	29	0	10	0	0
0730-0800	7	26	V	0	24	14	5	24	29	0	5	0	0
0800-0830	6	20	V	0	19	14	5	19	29	5	0	0	10
0830-0900	5	26	SE	0	10	5	5	10	52	0	10	0	10
0900-0930	6	32	SE	0	5	14	10	19	48	0	5	0	0
0930-1000	7	20	N SE	0	5	23	14	14	32	0	5	0	9
1000-1030	6	20	NE SE	0	5	14	29	19	19	0	0	5	10
1030-1100	8	26	SE	0	0	14	27	18	18	0	5	0	18
1100-1130	9	26	SE	0	5	23	18	18	18	0	0	0	18
1130-1200	11	32	SE	0	9	18	9	18	9	0	5	5	27
1200-1230	10	26	SE	0	0	18	9	18	9	0	5	0	41
1230-1300	12	26	SE	0	0	41	5	9	9	0	5	5	27
1300-1330	12	32	SE	0	0	18	0	9	9	0	5	5	55

SITE 40 VHF JAN, 1966

TIME	WIND SPEED (KNOTS) AVG	MAX	MAX DIR	CALM	DIRECTION PERCENTAGE DISTRIBUTION VAR	N	NE	E	SE	S	SW	W	NW
1330-1400	11	32	SE	0	0	19	0	10	5	0	5	5	57
1400-1430	11	26	SE	0	0	24	5	10	5	0	5	5	48
1430-1500	12	26	SE	0	0	24	5	10	5	0	5	10	43
1500-1530	12	26	SE	0	0	29	10	5	5	0	5	10	38
1530-1600	11	26	SE	0	0	33	10	5	5	0	5	5	38
1600-1630	10	26	SE	0	5	29	14	0	5	0	0	10	38
1630-1700	8	26	SE	0	10	38	10	0	10	0	5	14	14
1700-1730	7	20	SE	0	14	29	14	0	5	5	5	10	19
1730-1800	7	20	SE	0	10	19	10	5	10	5	14	5	24
1800-1830	7	26	SE	0	10	5	25	0	5	10	15	10	20
1830-1900	7	20	SE	0	0	20	20	5	15	5	15	5	15
1900-1930	7	20	SE	0	5	5	25	10	25	5	10	0	15
1930-2000	8	14	NE E SE	0	5	10	20	10	30	10	5	0	10
2000-2030	7	14	SE	0	5	15	20	15	35	5	0	0	5
2030-2100	7	20	SE	0	15	15	15	10	25	5	10	0	5
2100-2130	6	20	SE	0	20	10	15	10	20	0	10	5	10
2130-2200	6	20	SE	0	25	10	20	15	15	0	5	5	5
2200-2230	5	14	SE	0	25	0	20	5	35	5	5	5	0
2230-2300	7	14	SE E	0	15	0	15	10	45	0	15	0	0
2300-2330	6	14	SE	0	20	0	5	25	40	0	10	0	0
2330-2400	6	14	V SE	0	30	0	5	30	25	0	10	0	0

SITE 40 VHF JAN,1966

TIME	WIND SPEED (KNOTS) AVG	MAX	MAX DIR	CALM	DIRECTION PERCENTAGE DISTRIBUTION VAR	N	NE	E	SE	S	SW	W	NW
0000-0100	7	14	V SE	0	17	7	7	31	29	0	7	2	0
0100-0200	7	20	V	0	14	7	12	10	40	2	14	0	0
0200-0300	7	14	V V SE	0	14	2	10	19	38	2	7	5	2
0300-0400	6	20	NE S	0	14	2	7	21	36	2	7	0	10
0400-0500	7	20	V	0	12	5	14	12	38	5	10	2	2
0500-0600	6	26	V	0	21	10	5	10	43	0	7	2	2
0600-0700	7	26	V	0	21	7	10	19	33	2	5	0	2
0700-0800	7	26	V	0	26	10	7	21	29	0	7	0	0
0800-0900	5	26	SE	0	14	10	5	14	40	2	5	0	10
0900-1000	6	32	SE	0	5	19	12	16	40	0	5	0	5
1000-1100	7	26	SE	0	2	14	28	10	19	0	2	2	14
1100-1200	10	32	SE	0	7	20	14	18	14	0	2	2	23
1200-1300	11	26	SE	0	0	30	7	14	9	0	5	2	34
1300-1400	12	32	SE	0	0	19	0	9	7	0	5	5	56
1400-1500	12	26	SE	0	0	24	5	10	5	0	5	7	45
1500-1600	12	26	SE	0	0	31	10	5	5	0	5	7	38
1600-1700	9	26	SE	0	7	33	12	0	7	0	2	12	26
1700-1800	7	20	SE	0	12	24	12	2	7	5	10	7	21
1800-1900	7	26	SE	0	5	13	22	2	10	7	15	7	17
1900-2000	7	20	SE	0	5	7	22	10	27	7	7	0	13
2000-2100	7	20	SE	0	10	15	17	13	30	5	5	0	5
2100-2200	6	20	SE	0	22	10	17	13	17	0	7	5	7
2200-2300	6	14	SE E	0	20	0	17	7	40	2	10	2	0
2300-2400	6	14	SE V	0	25	0	5	27	32	0	10	0	0

SITE 40 VHF JAN,1966

TIME	WIND SPEED (KNOTS) AVG	MAX	MAX DIR	CALM	DIRECTION PERCENTAGE DISTRIBUTION VAR	N	NE	E	SE	S	SW	W	NW
0000-0200	7	20	V	0	15	7	10	20	35	1	11	1	0
0200-0400	7	20	S	0	14	2	8	20	37	2	7	2	6
0400-0600	6	26	V	0	17	7	10	11	40	2	8	2	2
0600-0800	7	26	V	0	24	8	8	20	31	1	6	0	1
0800-1000	6	32	SE	0	9	14	8	15	40	1	5	0	7
1000-1200	9	32	SE	0	5	17	21	18	16	0	2	2	18
1200-1400	11	32	SE	0	0	24	3	11	8	0	5	3	45
1400-1600	12	26	SE	0	0	27	7	7	5	0	5	7	42
1600-1800	8	26	SE	0	10	29	12	1	7	2	6	10	24
1800-2000	7	26	SE	0	5	10	22	6	19	7	11	4	15
2000-2200	7	20	SE	0	16	13	17	13	24	2	6	2	6
2200-2400	6	14	SE E V	0	22	0	11	17	36	1	10	1	0

SITE 40 VHF JAN,1966

TIME	WIND SPEED (KNOTS) AVG	MAX	MAX DIR	CALM	DIRECTION PERCENTAGE DISTRIBUTION VAR	N	NE	E	SE	S	SW	W	NW
0000-0300	7	20	V	0	15	6	10	20	36	2	10	2	1
0300-0600	6	26	V	0	16	6	9	14	39	2	8	2	5
0600-0900	6	26	V SE	0	21	9	7	18	34	2	6	0	4
0900-1200	8	32	SE	0	5	18	18	18	24	0	3	2	14
1200-1500	11	32	SE	0	0	24	4	11	7	0	5	5	45
1500-1800	9	26	SE	0	6	29	11	2	6	2	6	9	29
1800-2100	7	26	SE	0	7	12	21	8	22	7	9	2	12
2100-2400	6	20	SE	0	22	3	13	16	30	1	9	2	2

SITE 40 VHF JAN.1966

TIME	WIND SPEED (KNOTS) AVG	MAX	MAX DIR	CALM	DIRECTION PERCENTAGE DISTRIBUTION VAR	N	NE	E	SE	S	SW	W	NW
0000-0400	7	20	V S	0	15	5	9	20	36	2	9	2	3
0400-0800	7	26	V	0	20	8	9	15	36	2	7	1	2
0800-1200	7	32	SE	0	7	16	15	17	28	1	3	1	13
1200-1600	12	32	SE	0	0	26	5	9	6	0	5	5	43
1600-2000	8	26	SE	0	7	20	17	4	13	5	9	7	20
2000-2400	6	20	SE	0	19	6	14	15	30	2	8	2	3

SITE 40 VHF JAN,1966

TIME	WIND SPEED (KNOTS) AVG	MAX	MAX DIR	CALM	DIRECTION PERCENTAGE DISTRIBUTION VAR	N	NE	E	SE	S	SW	W	NW
0000-0600	7	26	V	0	15	6	9	17	37	2	9	2	3
0600-1200	7	32	SE	0	13	13	13	18	29	1	4	1	9
1200-1800	10	32	SE	0	3	27	7	7	7	1	5	7	37
1800-2400	7	26	SE	0	15	7	17	12	26	4	9	2	7

SITE 43 PAD A, SURFACE JAN,1966

TIME	WIND SPEED (KNOTS) AVG	MAX	MAX DIR	CALM	DIRECTION VAR	N	NE	PERCENTAGE E	SE	DISTRIBUTION S	SW	W	NW
0000-0030	8	18	NE	0	5	0	14	14	67	0	0	0	0
0030-0100	7	13	E	0	0	0	10	29	62	0	0	0	0
0100-0130	8	13	E NE	0	5	0	19	19	57	0	0	0	0
0130-0200	6	8	SE E N	0	0	5	10	19	67	0	0	0	0
0200-0230	7	13	NE E SE	0	0	5	10	29	52	0	0	0	5
0230-0300	7	13	E	0	5	0	14	29	48	0	0	0	5
0300-0330	8	13	E NE	0	0	10	10	43	38	0	0	0	0
0330-0400	8	13	NE E	0	0	5	19	29	48	0	0	0	0
0400-0430	8	13	SE E NE	0	0	5	14	24	52	5	0	0	0
0430-0500	8	13	SE NE	0	0	5	10	24	62	0	0	0	0
0500-0530	8	13	SE E	0	5	0	14	24	57	0	0	0	0
0530-0600	8	13	SE E	0	5	5	10	33	48	0	0	0	0
0600-0630	8	13	SE E N	0	0	10	5	40	35	5	0	0	5
0630-0700	7	13	E SE N	0	0	10	10	35	40	5	0	0	0
0700-0730	8	13	SE E	0	5	0	10	35	50	0	0	0	0
0730-0800	8	13	SE E	0	5	5	10	30	50	0	0	0	0
0800-0830	7	13	SE E NE	0	0	10	15	35	35	0	0	5	0
0830-0900	8	13	SE E N	0	5	15	15	25	40	0	0	0	0
0900-0930	8	18	N	0	5	24	14	24	33	0	0	0	0
0930-1000	7	13	E N NE	0	0	24	14	29	33	0	0	0	0
1000-1030	7	13	N NE	0	0	20	15	35	10	0	0	0	20
1030-1100	6	13	N NW NE	0	10	25	10	25	5	0	0	0	25
1100-1130	7	18	N	0	5	40	10	15	0	0	0	5	25
1130-1200	8	18	N NE	0	5	15	10	10	0	0	0	5	55
1200-1230	7	18	NW NE	0	5	10	10	5	0	0	5	10	55
1230-1300	7	18	N	0	0	10	5	5	0	0	5	15	60

SITE 43 PAD A, SURFACE JAN, 1966

TIME	WIND SPEED (KNOTS) AVG	MAX	MAX DIR	CALM	DIRECTION PERCENTAGE DISTRIBUTION VAR	N	NE	E	SE	S	SW	W	NW
1300-1330	7	18		0	0	5	5	0	0	0	5	16	68
1330-1400	8	18	NW	0	0	10	5	0	0	0	10	15	60
1400-1430	8	18	N NW	0	0	15	5	0	0	5	5	10	60
1430-1500	8	18	NE	0	0	14	9	0	0	0	5	18	55
1500-1530	8	18	N	0	0	18	9	0	5	0	0	9	59
1530-1600	7	18	N	0	5	19	5	0	0	0	0	14	57
1600-1630	5	13	NW NE	0	0	33	11	0	0	0	6	11	39
1630-1700	5	13	NE NW	0	11	44	11	0	0	0	6	6	22
1700-1730	5	13	NE NW	0	6	22	17	6	6	6	6	0	33
1730-1800	5	13	NW NE	0	6	33	17	11	6	6	6	0	17
1800-1830	5	13	NE	0	0	26	21	5	11	16	0	0	21
1830-1900	6	13	SE NE	0	11	32	11	0	26	0	0	0	21
1900-1930	7	13	E NE	0	5	11	26	16	21	0	0	0	21
1930-2000	6	13	NE	0	0	16	32	0	32	5	0	0	16
2000-2030	6	13	N NE	0	5	21	16	21	21	5	0	0	11
2030-2100	6	13	N	0	5	21	16	5	42	5	0	0	5
2100-2130	7	13	NE	0	5	11	32	16	26	5	0	0	5
2130-2200	5	13	E	0	5	21	26	16	32	0	0	0	0
2200-2230	6	13	SE	0	5	0	26	21	42	0	0	5	0
2230-2300	7	13	SE E NE	0	0	0	26	26	47	0	0	0	0
2300-2330	8	13	SE E	0	5	0	11	37	47	0	0	0	0
2330-2400	8	13	SE E NE	0	0	0	16	37	47	0	0	0	0

SITE 43 PAD A, SURFACE JAN,1966

TIME	WIND SPEED (KNOTS) AVG	MAX	MAX DIR	CALM	DIRECTION PERCENTAGE DISTRIBUTION VAR	N	NE	E	SE	S	SW	W	NW
0000-0100	7	18	NE	0	2	0	12	21	64	0	0	0	0
0100-0200	7	13	E NE	0	2	2	14	19	62	0	0	0	0
0200-0300	7	13	E SE	0	2	2	12	29	50	0	0	0	5
0300-0400	8	13	E NE	0	0	7	14	36	43	0	0	0	0
0400-0500	8	13	SE E NE	0	0	5	12	24	57	2	0	0	0
0500-0600	8	13	SE E	0	5	2	12	29	52	0	0	0	0
0600-0700	8	13	SE E N	0	0	10	7	38	38	5	0	0	2
0700-0800	8	13	SE E	0	5	2	10	32	50	0	0	0	0
0800-0900	8	13	SE E NE N	0	2	13	15	30	38	0	0	2	0
0900-1000	8	18	N	0	2	24	14	26	33	0	0	0	0
1000-1100	7	13	N NE NW	0	5	22	13	30	7	0	0	0	22
1100-1200	7	18	N NE	0	5	27	10	13	0	0	0	5	40
1200-1300	7	18	NW NE N	0	2	10	7	5	0	0	5	13	57
1300-1400	7	18	NW	0	0	8	5	0	0	0	8	15	64
1400-1500	8	18	N NW NE	0	0	14	7	0	0	2	5	14	57
1500-1600	8	18	N	0	2	19	7	0	2	0	0	12	58
1600-1700	5	13	NW NE	0	6	39	11	0	0	0	6	8	31
1700-1800	5	13	NE NW	0	6	28	17	8	6	6	6	0	25
1800-1900	6	13	NE SE	0	5	29	16	3	18	8	0	0	21
1900-2000	7	13	E NE	0	3	13	29	8	26	3	0	0	18
2000-2100	6	13	N NE	0	5	21	16	13	32	5	0	0	8
2100-2200	6	13	NE E	0	5	16	29	16	29	3	0	0	3
2200-2300	7	13	SE E NE	0	3	0	26	24	45	0	0	3	0
2300-2400	8	13	SE E NE	0	3	0	13	37	47	0	0	0	0

SITE 43 PAD A, SURFACE JAN,1966

TIME	WIND SPEED (KNOTS) AVG	MAX	MAX DIR	CALM	DIRECTION PERCENTAGE DISTRIBUTION VAR	N	NE	E	SE	S	SW	W	NW
0000-0200	7	18	NE	0	2	1	13	20	63	0	0	0	0
0200-0400	8	13	E SE NE	0	1	5	13	32	46	0	0	0	2
0400-0600	8	13	SE E NE	0	2	4	12	26	55	1	0	0	0
0600-0800	8	13	SE E N	0	2	6	9	35	44	2	0	0	1
0800-1000	8	18	N	0	2	18	15	28	35	0	0	1	0
1000-1200	7	18	N NE	0	5	25	11	21	4	0	0	2	31
1200-1400	7	18	NW NE N	0	1	9	6	3	0	0	6	14	61
1400-1600	8	18	N NW NE	0	1	16	7	0	1	1	2	13	58
1600-1800	5	13	NW NE	0	6	33	14	4	3	3	6	4	28
1800-2000	6	13	NE SE E	0	4	21	22	5	22	5	0	0	20
2000-2200	6	13	N NE E	0	5	18	22	14	30	4	0	0	5
2200-2400	7	13	SE E NE	0	3	0	20	30	46	0	0	1	0

SITE 43 PAD A, SURFACE JAN,1966

TIME	WIND SPEED (KNOTS) AVG	MAX	MAX DIR	CALM	DIRECTION PERCENTAGE DISTRIBUTION VAR	N	NE	E	SE	S	SW	W	NW
0000-0300	7	18	NE	0	2	2	13	23	59	0	0	0	2
0300-0600	8	13	E VE SE	0	2	5	13	29	51	1	0	0	0
0600-0900	8	13	SE E V NE	0	2	8	11	33	42	2	0	1	1
0900-1200	7	18	N VE	0	4	25	12	23	14	0	0	2	20
1200-1500	7	18	NW VE V	0	1	11	7	2	0	1	6	14	60
1500-1800	6	18	V	0	4	28	11	3	3	2	3	7	39
1800-2100	6	13	NE SE E	0	4	21	20	8	25	5	0	0	16
2100-2400	7	13	N NE E SE	0	4	5	23	25	40	1	0	1	1

SITE 43 PAD A, SURFACE JAN,1966

TIME	WIND SPEED (KNOTS) AVG	MAX	MAX DIR	CALM	DIRECTION PERCENTAGE DISTRIBUTION VAR	N	NE	E	SE	S	SW	W	NW
0000-0400	7	18	NE	0	2	3	13	26	55	0	0	0	1
0400-0800	6	13	SE E NE	0	2	5	10	30	49	2	0	0	1
0800-1200	7	18	N N NE	0	4	22	13	25	20	0	0	2	15
1200-1600	7	18	NW NE N	0	1	13	7	1	1	1	4	13	59
1600-2000	5	13	NW NE SE	0	5	27	18	5	13	4	3	2	24
2000-2400	7	13	E N NE E SE	0	4	9	21	22	38	2	0	1	3

SITE 43 PAD A, SURFACE JAN, 1966

	WIND SPEED (KNOTS)				DIRECTION PERCENTAGE DISTRIBUTION									
TIME	AVG	MAX	MAX DIR	CALM	VAR	N	NE	E	SE	S	SW	W	NW
0000-0600	7	18	NE	0	2	3	13	26	55	0	0	0	1
0600-1200	7	18	N NE	0	3	17	12	28	28	1	0	1	11
1200-1800	7	18	NW NE N	0	3	19	9	2	1	1	5	11	50
1800-2400	7	13	NE SE E N	0	4	13	21	17	33	3	0	0	8

SITE 46 RANGE OPERATIONS JAN, 1966

TIME	WIND SPEED (KNOTS) AVG	MAX	MAX DIR	CALM	DIRECTION PERCENTAGE DISTRIBUTION VAR	N	NE	E	SE	S	SW	W	NW
0000-0030	7	13	N NE	0	0	33	44	11	11	0	0	0	0
0030-0100	8	13	NE	0	0	33	33	11	22	0	0	0	0
0100-0130	7	13	NE N	0	11	39	22	17	6	6	0	0	0
0130-0200	7	13	N E	0	6	50	11	17	6	0	6	0	6
0200-0230	8	18	N	0	6	44	11	17	11	6	0	0	6
0230-0300	8	18	N	0	0	17	33	22	17	0	0	0	11
0300-0330	8	18	N	0	0	28	28	22	11	0	0	0	11
0330-0400	8	18	N	0	0	44	39	11	6	0	0	0	0
0400-0430	9	23	N	0	6	44	28	11	6	0	0	6	0
0430-0500	7	18	N	0	6	33	33	17	6	0	6	0	0
0500-0530	7	13	N E	0	6	39	28	17	0	6	0	6	0
0530-0600	7	13	N NE	0	6	41	24	12	6	0	6	0	6
0600-0630	6	13	N	0	6	39	28	22	0	0	6	0	0
0630-0700	7	13	N NE	0	6	39	22	28	0	0	0	6	0
0700-0730	7	13	N NE	0	6	39	22	11	17	0	0	6	0
0730-0800	7	13	SE N	0	6	39	22	0	28	6	0	0	0
0800-0830	7	13	NW NE	0	11	39	22	6	6	6	6	0	6
0830-0900	6	13	NW NE	0	5	37	11	26	0	0	16	0	5
0900-0930	6	13	N NE	0	5	42	26	11	0	0	5	5	5
0930-1000	6	13	N NE	0	11	28	28	6	6	0	0	6	17
1000-1030	7	13	N NE	0	5	37	26	0	5	0	0	11	16
1030-1100	8	13	N NE	0	5	58	11	0	5	0	0	0	21
1100-1130	9	18	N	0	0	50	11	0	0	0	6	0	33
1130-1200	10	23		0	5	47	21	0	0	5	0	11	11
1200-1230	9	23		0	5	21	16	0	0	0	0	0	58
1230-1300	10	23	NE	0	5	5	16	5	0	0	0	0	68
1300-1330	9	23		0	6	6	11	6	0	0	0	0	72

SITE 46 RANGE OPERATIONS JAN,1966

TIME	WIND SPEED (KNOTS) AVG	MAX	MAX DIR	CALM	DIRECTION PERCENTAGE DISTRIBUTION VAR	N	NE	E	SE	S	SW	W	NW
1330-1400	9	23	N	0	6	11	11	0	0	0	0	0	72
1400-1430	10	23	N	0	5	16	0	0	0	0	0	0	79
1430-1500	9	23	NW	0	6	17	6	0	0	0	0	0	72
1500-1530	9	18	N NW NE	0	6	6	11	0	0	0	0	6	72
1530-1600	9	18	N	0	0	11	6	0	0	0	0	0	83
1600-1630	8	18	NW	0	0	12	6	0	0	0	0	0	82
1630-1700	8	18	N	0	0	39	6	0	0	0	0	11	44
1700-1730	7	13	NW N	0	0	38	6	0	6	0	0	0	50
1730-1800	7	18	N	0	0	53	6	0	0	12	0	0	29
1800-1830	8	13	NW N	0	6	50	0	6	0	0	6	0	33
1830-1900	8	13	NW N	0	6	50	6	11	0	0	0	0	28
1900-1930	9	18	N	0	6	28	28	0	11	0	0	0	28
1930-2000	9	13	NW N NE	0	6	22	22	0	17	0	0	0	33
2000-2030	8	13	NW N NE	0	6	33	17	6	11	0	0	6	22
2030-2100	8	13	NW N NE	0	11	44	6	17	6	0	0	0	17
2100-2130	8	13	NW N NE	0	17	39	17	0	6	0	0	0	22
2130-2200	9	18	NE	0	6	33	22	6	11	0	0	0	22
2200-2230	8	13	N NE	0	6	28	17	33	0	0	0	0	17
2230-2300	8	18	N	0	6	22	39	17	6	0	0	0	11
2300-2330	8	13	N NE	0	0	29	35	12	18	0	0	0	6
2330-2400	7	13	N NE	0	0	35	29	12	12	6	0	0	6

SITE 46 RANGE OPERATIONS JAN, 1966

TIME	WIND SPEED (KNOTS) AVG	MAX	MAX DIR	CALM	DIRECTION PERCENTAGE DISTRIBUTION VAR	N	NE	E	SE	S	SW	W	NW
0000-0100	7	13	N NE	0	0	33	39	11	17	0	0	0	0
0100-0200	7	13	NE N E	0	8	44	17	17	6	3	3	0	3
0200-0300	8	18	N	0	3	31	22	19	14	3	0	0	8
0300-0400	8	18	N	0	0	36	33	17	8	0	0	0	6
0400-0500	8	23	N	0	6	39	31	14	6	0	3	3	0
0500-0600	7	13	N E NE	0	6	40	26	14	3	3	3	3	3
0600-0700	6	13	N NE	0	6	39	25	25	0	0	3	3	0
0700-0800	7	13	N NE SE	0	6	39	22	6	22	3	0	3	0
0800-0900	6	13	NW NE N	0	8	38	16	16	3	3	11	0	5
0900-1000	6	13	N NE	0	8	35	27	8	3	0	3	5	11
1000-1100	8	13	N NE	0	5	47	18	0	5	0	0	5	18
1100-1200	10	23		0	3	49	16	0	0	3	3	5	22
1200-1300	9	23	NE	0	5	13	16	3	0	0	0	0	63
1300-1400	9	23	N	0	6	8	11	3	0	0	0	0	72
1400-1500	9	23	N NW	0	5	16	3	0	0	0	0	0	76
1500-1600	9	18	N NW NE	0	3	8	8	0	0	0	0	3	78
1600-1700	8	18	NW N	0	0	26	6	0	0	0	0	6	63
1700-1800	7	18	N	0	0	45	6	0	3	6	0	0	39
1800-1900	8	13	NW N	0	6	50	3	8	0	0	3	0	31
1900-2000	9	18	N	0	6	25	25	0	14	0	0	0	31
2000-2100	8	13	NW N NE	0	8	39	11	11	8	0	0	3	19
2100-2200	8	18	NE	0	11	36	19	3	8	0	0	0	22
2200-2300	8	18	N	0	6	25	28	25	3	0	0	0	14
2300-2400	7	13	N NE	0	0	32	32	12	15	3	0	0	6

SITE 46 RANGE OPERATIONS JAN,1966

TIME	WIND SPEED (KNOTS) AVG	MAX	MAX DIR	CALM	DIRECTION PERCENTAGE DISTRIBUTION VAR	N	NE	E	SE	S	SW	W	NW
0000-0200	7	13	N NE E	0	4	39	28	14	11	1	1	0	1
0200-0400	8	18	N	0	1	33	28	18	11	1	0	0	7
0400-0600	8	23	N	0	6	39	28	14	4	1	3	3	1
0600-0800	7	13	N NE SE	0	6	39	24	15	11	1	1	3	0
0800-1000	6	13	NW NE N	0	8	36	22	12	3	1	7	3	8
1000-1200	9	23		0	4	48	17	0	3	1	1	5	20
1200-1400	9	23	NE N	0	5	11	14	3	0	0	0	0	68
1400-1600	9	23	N NW	0	4	12	5	0	0	0	0	1	77
1600-1800	8	18	NW N	0	0	35	6	0	1	3	0	3	51
1800-2000	8	18	N	0	6	38	14	4	7	0	1	0	31
2000-2200	8	18	NE	0	10	38	15	7	8	0	0	1	21
2200-2400	8	18	N	0	3	29	30	19	9	1	0	0	10

SITE 46 RANGE OPERATIONS JAN, 1966

TIME	WIND SPEED (KNOTS) AVG	MAX	MAX DIR	CALM	DIRECTION PERCENTAGE DISTRIBUTION VAR	N	NE	E	SE	S	SW	W	NW
0000-0300	7	18	N	0	4	36	26	16	12	2	1	0	4
0300-0600	8	23	N	0	4	38	30	15	6	1	2	2	3
0600-0900	6	13	N NE SE NW	0	6	39	21	16	8	2	5	2	2
0900-1200	8	23		0	5	44	21	3	3	1	2	5	17
1200-1500	9	23	NE N NW	0	5	13	10	2	0	0	0	0	70
1500-1800	8	18	N NW NE	0	1	26	7	0	1	2	0	3	61
1800-2100	8	18	N	0	6	38	13	6	7	0	1	1	27
2100-2400	8	18	NE N	0	6	31	26	13	8	1	0	0	14

SITE 46 RANGE OPERATIONS JAN,1966

TIME	WIND SPEED (KNOTS) AVG	MAX	MAX DIR		CALM	DIRECTION VAR	N	NE	PERCENTAGE E	SE	DISTRIBUTION S	SW	W	NW
0000-0400	7	18	N		0	3	36	28	16	11	1	1	0	4
0400-0800	7	23	N		0	6	39	26	15	8	1	2	3	1
0800-1200	7	23			0	6	42	19	6	3	1	4	4	14
1200-1600	9	23	NE	N NW	0	5	12	10	1	0	0	0	1	72
1600-2000	8	18	NW	N	0	3	36	10	2	4	1	1	1	41
2000-2400	8	18	NE	N	0	6	33	23	13	8	1	0	1	15

SITE 46 RANGE OPERATIONS JAN, 1966

TIME	WIND SPEED (KNOTS) AVG	MAX	MAX DIR	CALM	DIRECTION VAR	N	NE	PERCENTAGE E	SE	DISTRIBUTION S	SW	W	NW
0000-0600	7	23	N	0	4	37	28	15	9	1	1	1	3
0600-1200	7	23		0	6	41	21	9	5	1	3	4	10
1200-1800	9	23	NE N NW	0	3	19	8	1	0	1	0	1	66
1800-2400	8	18	N NE	0	6	35	20	10	8	0	0	0	21

SITE 55 REMOTE RADAR, SURFACE JAN,1966

TIME	WIND SPEED (KNOTS) AVG	MAX	MAX DIR	CALM	DIRECTION PERCENTAGE DISTRIBUTION VAR	N	NE	E	SE	S	SW	W	NW
0000-0030	8	13	N NE SE	0	0	36	36	0	18	9	0	0	0
0030-0100	8	13	NE SE	0	0	36	27	0	18	0	0	9	9
0100-0130	9	13	NE SE	0	0	45	27	0	18	0	9	0	0
0130-0200	10	18		0	0	36	36	0	18	9	0	0	0
0200-0230	10	18		0	0	45	18	9	27	0	0	0	0
0230-0300	10	18		0	0	45	18	0	36	0	0	0	0
0300-0330	9	13	N SE NE	0	0	45	18	0	18	9	0	9	0
0330-0400	11	18		0	0	36	27	0	27	0	0	0	9
0400-0430	11	18		0	0	45	27	0	18	9	0	0	0
0430-0500	10	18		0	0	45	18	0	27	9	0	0	0
0500-0530	10	18		0	0	36	27	0	27	9	0	0	0
0530-0600	10	18		0	0	45	18	9	18	9	0	0	0
0600-0630	7	18		0	0	45	27	0	9	9	0	0	9
0630-0700	7	18		0	0	45	36	0	9	0	0	9	0
0700-0730	7	18		0	9	18	45	9	9	9	0	0	0
0730-0800	7	13	E NE SE	0	0	36	18	18	18	9	0	0	0
0800-0830	7	23	N	0	0	36	18	0	45	0	0	0	0
0830-0900	7	18	N	0	0	36	18	0	45	0	0	0	0
0900-0930	7	13	N SE	0	0	38	15	0	31	8	8	0	0
0930-1000	8	18	N SE	0	0	50	14	0	21	0	0	0	14
1000-1030	9	18	N SE	0	0	54	8	0	31	0	0	0	8
1030-1100	9	18	N	0	0	53	13	0	13	13	0	0	7
1100-1130	9	18	N	0	0	60	7	0	13	7	0	0	13
1130-1200	9	18	N S	0	0	57	7	0	14	7	0	7	7
1200-1230	9	18	N	0	0	75	0	0	13	6	0	0	6
1230-1300	10	18	N SE	0	0	75	0	0	6	13	0	6	0
1300-1330	10	23	N	0	0	81	0	0	6	13	0	0	0

SITE 55 REMOTE RADAR, SURFACE JAN, 1966

TIME	WIND SPEED (KNOTS) AVG	MAX	MAX DIR	CALM	DIRECTION VAR	N	NE	PERCENTAGE E	SE	DISTRIBUTION S	SW	W	NW
1330-1400	11	23	N	0	0	76	6	0	6	6	6	0	0
1400-1430	12	23	N	0	0	76	6	0	6	6	0	0	6
1430-1500	12	23	N	0	0	81	6	0	6	6	0	0	0
1500-1530	12	23	N	0	0	87	0	0	0	13	0	0	0
1530-1600	12	23	N	0	0	92	0	0	8	0	0	0	0
1600-1630	11	23	N	0	0	100	0	0	0	0	0	0	0
1630-1700	10	23	N	0	0	92	8	0	0	0	0	0	0
1700-1730	11	23	N	0	0	83	8	0	0	0	0	0	8
1730-1800	10	23	N	0	0	82	9	0	0	0	0	0	9
1800-1830	10	23	N	0	0	83	17	0	0	0	0	0	0
1830-1900	10	23	N	0	0	75	25	0	0	0	0	0	0
1900-1930	11	18	N	0	0	75	25	0	0	0	0	0	0
1930-2000	10	18	N	0	0	67	25	8	0	0	0	0	0
2000-2030	10	18	N	0	0	58	25	17	0	0	0	0	0
2030-2100	10	18	N	0	0	50	25	8	17	0	0	0	0
2100-2130	10	18	N	0	0	58	17	8	17	0	0	0	0
2130-2200	9	18		0	0	58	25	8	8	0	0	0	0
2200-2230	9	18	SE	0	0	50	25	17	8	0	0	0	0
2230-2300	9	13	N SE NE	0	0	42	33	17	8	0	0	0	0
2300-2330	9	13	SE NE N	0	0	50	25	8	17	0	0	0	0
2330-2400	8	13	SE N	0	0	42	33	0	25	0	0	0	0

SITE 55 REMOTE RADAR, SURFACE JAN,1966

TIME	WIND SPEED (KNOTS) AVG	MAX	MAX DIR	CALM	DIRECTION PERCENTAGE DISTRIBUTION VAR	N	NE	E	SE	S	SW	W	NW
0000-0100	8	13	N NE SE	0	0	36	32	0	18	5	0	5	5
0100-0200	9	18		0	0	41	32	0	18	5	5	0	0
0200-0300	10	18		0	0	45	18	5	32	0	0	0	0
0300-0400	10	18		0	0	41	23	0	23	5	0	5	5
0400-0500	10	18		0	0	45	23	0	23	9	0	0	0
0500-0600	10	18		0	0	41	23	5	23	9	0	0	0
0600-0700	7	18		0	0	45	32	0	9	5	0	5	5
0700-0800	7	18		0	5	27	32	14	14	9	0	0	0
0800-0900	7	23	N	0	0	36	18	0	45	0	0	0	0
0900-1000	7	18	N SE	0	0	44	15	0	26	4	4	0	7
1000-1100	9	18	N SE	0	0	54	11	0	21	7	0	0	7
1100-1200	9	18	N S	0	0	59	7	0	14	7	0	3	10
1200-1300	9	18	N SE	0	0	75	0	0	9	9	0	3	3
1300-1400	11	23	N	0	0	79	3	0	6	9	3	0	0
1400-1500	12	23	N	0	0	79	6	0	6	6	0	0	3
1500-1600	12	23	N	0	0	89	0	0	4	7	0	0	0
1600-1700	10	23	N	0	0	96	4	0	0	0	0	0	0
1700-1800	10	23	N	0	0	83	9	0	0	0	0	0	9
1800-1900	10	23	N	0	0	79	21	0	0	0	0	0	0
1900-2000	10	18	N	0	0	71	25	4	0	0	0	0	0
2000-2100	10	18	N	0	0	54	25	13	8	0	0	0	0
2100-2200	9	18	N	0	0	58	21	8	13	0	0	0	0
2200-2300	9	18	SE	0	0	46	29	17	8	0	0	0	0
2300-2400	8	13	SE NE N	0	0	46	29	4	21	0	0	0	0

SITE 55 REMOTE RADAR, SURFACE JAN,1966

TIME	WIND SPEED (KNOTS) AVG	MAX	MAX DIR	CALM	DIRECTION VAR	N	NE	PERCENTAGE E	SE	S	DISTRIBUTION SW	W	NW
0000-0200	9	18		0	0	39	32	0	18	5	2	2	2
0200-0400	10	18		0	0	43	20	2	27	2	0	2	2
0400-0600	10	18		0	0	43	23	2	23	9	0	0	0
0600-0800	7	18		0	2	36	32	7	11	7	0	2	2
0800-1000	7	23	N	0	0	41	16	0	35	2	2	0	4
1000-1200	9	18	N SE 5	0	0	56	9	0	18	7	0	2	9
1200-1400	10	23	N	0	0	77	2	0	8	9	2	2	2
1400-1600	12	23	N	0	0	84	3	0	5	7	0	0	2
1600-1800	10	23	N	0	0	89	6	0	0	0	0	0	4
1800-2000	10	23	N	0	0	75	23	2	0	0	0	0	0
2000-2200	9	18	N	0	0	56	23	10	10	0	0	0	0
2200-2400	9	18	SE	0	0	46	29	10	15	0	0	0	0

SITE 55 REMOTE RADAR, SURFACE JAN.1966

TIME	WIND SPEED (KNOTS) AVG	MAX	MAX DIR	CALM	DIRECTION VAR	N	NE	PERCENTAGE E	SE	DISTRIBUTION S	SW	W	NW
0000-0300	9	18		0	0	41	27	2	23	3	2	2	2
0300-0600	10	18		0	0	42	23	2	23	8	0	2	2
0600-0900	7	23	N	0	2	36	27	5	23	5	0	2	2
0900-1200	8	18	N SE S	0	0	52	11	0	20	6	1	1	8
1200-1500	11	23	N	0	0	78	3	0	7	8	1	1	2
1500-1800	11	23	N	0	0	89	4	0	1	3	0	0	3
1800-2100	10	23	N	0	0	68	24	6	3	0	0	0	0
2100-2400	9	18	N SE	0	0	50	26	10	14	0	0	0	0

SITE 55 REMOTE RADAR, SURFACE JAN,1966

TIME	WIND SPEED (KNOTS) AVG	MAX	MAX DIR	CALM	DIRECTION PERCENTAGE DISTRIBUTION VAR	N	NE	E	SE	S	SW	W	NW
0000-0400	9	18		0	0	41	26	1	23	3	1	2	2
0400-0800	8	18		0	1	40	27	5	17	8	0	1	1
0800-1200	8	23	N	0	0	49	12	0	25	5	1	1	7
1200-1600	11	23	N	0	0	80	2	0	6	8	1	1	2
1600-2000	10	23	N	0	0	82	15	1	0	0	0	0	2
2000-2400	9	18	N SE	0	0	51	26	10	13	0	0	0	0

SITE 55 REMOTE RADAR, SURFACE JAN,1966

TIME	WIND SPEED (KNOTS) AVG	MAX	MAX DIR	CALM	DIRECTION PERCENTAGE DISTRIBUTION VAR	N	NE	E	SE	S	SW	W	NW
0000-0600	10	18		0	0	42	25	2	23	5	1	2	2
0600-1200	8	23	V	0	1	45	18	2	21	5	1	1	5
1200-1800	11	23	V	0	0	83	3	0	5	6	1	1	2
1800-2400	9	23	V	0	0	59	25	8	8	0	0	0	0

SITE 1 TARGET RIDGE APR,1966

TIME	WIND SPEED (KNOTS) AVG	MAX	MAX DIR	CALM	DIRECTION PERCENTAGE DISTRIBUTION VAR	N	NE	E	SE	S	SW	W	NW
0000-0030	6	18	N	0	0	40	23	17	3	0	7	0	10
0030-0100	6	18	N	0	0	47	27	13	3	0	3	0	7
0100-0130	6	18	N	0	0	50	13	13	3	3	3	0	13
0130-0200	6	18	N	0	0	47	13	13	0	3	7	3	13
0200-0230	6	18	N	0	3	40	30	13	0	0	3	0	10
0230-0300	6	13	N NW	0	3	37	27	13	3	0	3	3	10
0300-0330	6	18	NE NW N	0	0	40	23	10	3	7	3	0	13
0330-0400	6	18	N	0	0	40	27	10	7	3	3	0	10
0400-0430	6	18	N	0	3	30	37	3	3	7	3	0	13
0430-0500	6	18	N	0	3	40	30	7	3	7	3	0	7
0500-0530	6	18	N	0	3	30	37	7	7	3	0	3	10
0530-0600	5	13	N NE	0	0	37	37	7	3	3	7	0	7
0600-0630	5	13	N NE	0	0	33	40	7	0	7	7	0	7
0630-0700	5	13	N NE	0	0	30	37	13	3	3	3	0	10
0700-0730	5	13	N NE	0	0	40	27	13	3	7	0	0	10
0730-0800	5	13	N NE	0	0	40	23	13	3	7	0	7	7
0800-0830	5	13	N	0	0	40	17	10	3	7	3	3	17
0830-0900	6	13	N	0	3	47	13	7	0	7	7	7	10
0900-0930	5	13	N	0	3	40	13	0	3	7	3	10	20
0930-1000	5	13	N	0	0	47	13	3	0	3	7	7	20
1000-1030	5	13	N	0	0	43	7	3	0	3	7	13	23
1030-1100	5	13	N	0	0	41	0	3	0	3	7	17	28
1100-1130	5	13	N	0	0	48	0	3	0	3	10	10	24
1130-1200	5	13	N	0	0	48	0	3	0	3	7	21	17
1200-1230	5	13	N	0	3	48	3	0	0	3	10	21	10
1230-1300	5	13	N NW	0	0	48	3	0	0	3	7	21	17

SITE 1 TARGET RIDGE APR,1966

TIME	WIND SPEED (KNOTS) AVG	MAX	MAX DIR	CALM	DIRECTION PERCENTAGE DISTRIBUTION VAR	N	NE	E	SE	S	SW	W	NW
1300-1330	5	13	N NW	0	0	39	0	0	0	0	7	18	36
1330-1400	5	13	N NW	0	0	41	0	0	0	0	7	10	41
1400-1430	6	13	N NW	0	0	38	0	0	0	0	10	14	38
1430-1500	6	18	NW	0	3	45	0	0	0	0	10	10	31
1500-1530	6	13	N NW	0	0	52	0	0	0	0	10	10	28
1530-1600	6	18	NW	0	0	60	3	0	0	0	7	7	23
1600-1630	6	18	NW	0	0	53	7	0	0	0	3	10	27
1630-1700	6	18	N	0	0	70	7	0	0	3	0	3	17
1700-1730	6	18	N	0	0	70	3	0	0	3	0	3	20
1730-1800	5	18	N	0	0	70	7	0	0	3	0	7	13
1800-1830	6	13	N	0	0	67	13	0	0	3	3	3	10
1830-1900	5	13	N	0	0	50	27	3	0	7	3	0	10
1900-1930	5	13	N NW	0	0	47	30	3	0	3	3	3	10
1930-2000	5	13	N	0	0	43	33	3	0	3	3	3	10
2000-2030	6	13	N NW	0	0	40	43	0	3	0	0	3	10
2030-2100	6	13	N NW NE	0	0	50	33	10	0	0	3	0	3
2100-2130	6	13	N NW	0	0	47	30	17	0	0	0	0	7
2130-2200	5	13	N NW	0	0	43	30	20	0	0	0	0	7
2200-2230	6	13	N NW NE	0	0	37	30	20	0	0	0	3	10
2230-2300	6	18	N	0	0	30	43	7	3	0	3	3	10
2300-2330	6	18	N	0	0	27	37	13	7	0	0	0	17
2330-2400	6	13	NE N E	0	0	33	37	13	0	0	3	0	13

SITE 1 TARGET RIDGE APR,1966

TIME	WIND SPEED (KNOTS) AVG	MAX	MAX DIR	CALM	DIRECTION PERCENTAGE DISTRIBUTION VAR	N	NE	E	SE	S	SW	W	NW
0000-0100	6	18	N	0	0	43	25	15	3	0	5	0	8
0100-0200	6	18	N	0	0	48	13	13	2	3	5	2	13
0200-0300	6	18	N	0	3	38	28	13	2	0	3	2	10
0300-0400	6	18	NW N	0	0	40	25	10	5	5	3	0	12
0400-0500	6	18	N	0	3	35	33	5	3	7	3	0	10
0500-0600	6	18	N	0	2	33	37	7	5	3	3	2	8
0600-0700	5	13	N NE	0	0	32	38	10	2	5	5	0	8
0700-0800	5	13	N NE	0	0	40	25	13	3	7	0	3	8
0800-0900	5	13	N	0	2	43	15	8	2	7	5	5	13
0900-1000	5	13	N	0	2	43	13	2	2	5	5	8	20
1000-1100	5	13	N	0	0	42	3	3	0	3	7	15	25
1100-1200	5	13	N	0	0	48	0	3	0	3	9	16	21
1200-1300	5	13	N NW	0	2	48	3	0	0	3	9	21	14
1300-1400	5	13	N NW	0	0	40	0	0	0	0	7	14	39
1400-1500	6	18	NW	0	2	41	0	0	0	0	10	12	34
1500-1600	6	18	NW	0	0	56	2	0	0	0	8	8	25
1600-1700	6	18	NW N	0	0	62	7	0	0	2	2	7	22
1700-1800	6	18	N	0	0	70	5	0	0	3	0	5	17
1800-1900	5	13	N	0	0	58	20	2	0	5	3	2	10
1900-2000	5	13	N NW	0	0	45	32	3	0	3	3	3	10
2000-2100	6	13	N NW NE	0	0	45	38	5	2	0	2	2	7
2100-2200	5	13	N NW	0	0	45	30	18	0	0	0	0	7
2200-2300	6	18	N	0	0	33	37	13	2	0	2	3	10
2300-2400	6	18	N	0	0	30	37	13	3	0	2	0	15

SITE 1 TARGET RIDGE APR,1966

TIME	WIND SPEED (KNOTS) AVG	MAX	MAX DIR	CALM	DIRECTION PERCENTAGE DISTRIBUTION VAR	N	NE	E	SE	S	SW	W	NW
0000-0200	6	18	N	0	0	46	19	14	2	2	5	1	11
0200-0400	6	18	N NW	0	2	39	27	12	3	2	3	1	11
0400-0600	6	18	N	0	2	34	35	6	4	5	3	1	9
0600-0800	5	13	N NE	0	0	36	32	12	2	6	2	2	8
0800-1000	5	13	N	0	2	43	14	5	2	6	5	7	17
1000-1200	5	13	N	0	0	45	2	3	0	3	8	15	23
1200-1400	5	13	N NW	0	1	44	2	0	0	2	8	17	26
1400-1600	6	18	NW	0	1	49	1	0	0	0	9	10	30
1600-1800	6	18	NW N	0	0	66	6	0	0	2	1	6	19
1800-2000	5	13	N NW	0	0	52	26	2	0	4	3	2	10
2000-2200	5	13	N NW NE	0	0	45	34	12	1	0	1	1	7
2200-2400	6	18	N	0	0	32	37	13	2	0	2	2	13

SITE 1 TARGET RIDGE APR,1966

TIME	WIND SPEED (KNOTS) AVG	MAX	MAX DIR	CALM	DIRECTION PERCENTAGE DISTRIBUTION VAR	N	NE	E	SE	S	SW	W	NW
0000-0300	6	18	N	0	1	43	22	14	2	1	4	1	11
0300-0600	6	18	NW N	0	2	36	32	7	4	5	3	1	10
0600-0900	5	13	N NE	0	1	38	26	11	2	6	3	3	10
0900-1200	5	13	N	0	1	45	6	3	1	4	7	13	22
1200-1500	5	18	NW	0	1	43	1	0	0	1	9	16	29
1500-1800	6	18	NW N	0	0	63	4	0	0	2	3	7	21
1800-2100	5	13	N NW NE	0	0	49	30	3	1	3	3	2	9
2100-2400	6	18	N	0	0	36	34	15	2	0	1	1	11

SITE 1 TARGET RIDGE APR,1966

TIME	WIND SPEED (KNOTS) AVG	MAX	MAX DIR	CALM	DIRECTION PERCENTAGE DISTRIBUTION VAR	N	NE	E	SE	S	SW	W	NW
0000-0400	6	18	N NW	0	1	42	23	13	3	2	4	1	11
0400-0800	5	18	N	0	1	35	33	9	3	5	3	1	9
0800-1200	5	13	N	0	1	44	8	4	1	5	6	11	20
1200-1600	5	18	NW	0	1	47	1	0	0	1	9	14	28
1600-2000	5	18	NW N	0	0	59	16	1	0	3	2	4	15
2000-2400	6	18	N	0	0	38	35	13	2	0	1	1	10

SITE 1 TARGET RIDGE APR,1966

TIME	WIND SPEED (KNOTS) AVG	MAX	MAX DIR	CALM	DIRECTION PERCENTAGE DISTRIBUTION VAR	N	NE	E	SE	S	SW	W	NW
0000-0600	6	18	N NW	0	1	40	27	11	3	3	4	1	10
0600-1200	5	13	N NE	0	1	41	16	7	1	5	5	8	16
1200-1800	6	18	NW N	0	1	53	3	0	0	1	6	11	25
1800-2400	5	18	N	0	0	43	32	9	1	1	2	2	10

SITE 20 PAD D, SURFACE APR,1966

TIME	WIND SPEED (KNOTS) AVG	MAX	MAX DIR	CALM	DIRECTION VAR	N	NE	PERCENTAGE E	SE	DISTRIBUTION S	SW	W	NW
0000-0030	7	18	NE	0	0	48	24	10	0	0	0	5	14
0030-0100	7	18	NE	0	0	43	24	14	0	5	0	0	14
0100-0130	7	18	NE	0	0	43	14	24	0	5	0	0	14
0130-0200	6	18	NE	0	0	43	19	24	0	0	0	0	14
0200-0230	6	18	NE	0	0	38	24	14	0	5	0	0	19
0230-0300	6	18	NE	0	0	43	24	14	0	0	5	0	14
0300-0330	6	18	NE	0	0	38	33	14	0	5	0	0	10
0330-0400	7	18	NE	0	0	43	29	10	5	5	0	0	10
0400-0430	7	18	NE	0	0	38	24	10	0	14	0	0	14
0430-0500	6	18	NE	0	0	48	19	14	0	5	5	5	5
0500-0530	7	13	N NE	0	0	43	14	19	5	5	0	5	10
0530-0600	6	13	N NE	0	0	43	5	33	5	0	5	0	10
0600-0630	5	13	NE	0	0	48	5	29	5	0	5	0	10
0630-0700	5	13	NE	0	0	48	10	19	5	5	0	5	10
0700-0730	6	13	NE N	0	0	52	10	10	10	5	0	5	10
0730-0800	6	13	N NE	0	5	52	5	5	5	5	5	5	14
0800-0830	6	13	N E NE	0	0	45	10	5	5	5	5	5	20
0830-0900	7	13	N E NE	0	0	55	5	5	0	10	10	0	15
0900-0930	8	13	N NW E	0	0	45	0	5	5	5	9	9	23
0930-1000	7	13	N NW E	0	0	45	0	5	5	5	0	18	23
1000-1030	6	13	N NW	0	0	26	4	0	0	9	4	22	35
1030-1100	6	13	N NW	0	0	19	0	0	0	10	5	19	48
1100-1130	7	13	NW SW	0	0	14	0	0	0	5	14	24	43
1130-1200	7	13	NW	0	0	10	0	0	0	5	19	19	48
1200-1230	7	13	NW	0	0	5	0	0	0	5	14	14	64
1230-1300	7	13	NW	0	0	5	0	0	0	5	9	23	59
1300-1330	6	13	NW	0	0	14	0	0	0	0	10	19	57

SITE 20 PAD D, SURFACE APR,1966

TIME	WIND SPEED (KNOTS) AVG	MAX	MAX DIR	CALM	DIRECTION PERCENTAGE DISTRIBUTION VAR	N	NE	E	SE	S	SW	W	NW
1330-1400	6	13	NW	0	0	19	0	0	0	0	10	14	57
1400-1430	7	13	NW	0	0	18	0	0	0	0	5	9	68
1430-1500	6	13	NW	0	0	19	0	0	0	0	5	14	62
1500-1530	6	13	NW	0	0	29	0	0	0	0	5	14	52
1530-1600	6	13	NW	0	0	33	0	0	0	0	5	0	62
1600-1630	6	13	NW	0	0	29	0	0	0	0	0	5	67
1630-1700	6	13	NW	0	0	43	0	5	0	0	0	10	43
1700-1730	6	13	NW N	0	0	57	0	0	0	0	5	10	29
1730-1800	6	13	N	0	0	60	0	0	5	0	5	5	25
1800-1830	6	8	NE SE N	0	0	55	15	0	5	0	5	5	15
1830-1900	6	8	NW N SE NE	0	0	55	20	10	5	0	0	5	5
1900-1930	6	8	NW N SE NE	0	0	65	15	0	5	0	5	5	5
1930-2000	6	8	NW NE N NW	0	0	50	20	10	5	0	0	5	10
2000-2030	6	13	N NE	0	0	50	30	5	0	5	0	0	10
2030-2100	7	13	N NW NE	0	0	40	25	5	0	10	0	0	20
2100-2130	7	13	N NW NE	0	0	38	33	10	0	0	0	0	19
2130-2200	7	13	N NW NE	0	0	29	33	14	0	0	0	10	14
2200-2230	6	13	N NE	0	0	29	38	10	0	0	0	14	10
2230-2300	6	13	N NE	0	5	38	19	14	5	0	0	10	10
2300-2330	7	13	N NE	0	5	38	33	10	0	0	0	10	5
2330-2400	7	18	NE	0	0	43	29	10	0	0	0	10	10

SITE 20 PAD D, SURFACE APR, 1966

TIME	WIND SPEED (KNOTS) AVG	MAX	MAX DIR	CALM	DIRECTION PERCENTAGE DISTRIBUTION VAR	N	NE	E	SE	S	SW	W	NW
0000-0100	7	18	NE	0	0	45	24	12	0	2	0	2	14
0100-0200	6	18	NE	0	0	43	17	24	0	2	0	0	14
0200-0300	6	18	NE	0	0	40	24	14	0	2	2	0	17
0300-0400	7	18	NE	0	0	40	31	12	2	5	0	0	10
0400-0500	7	18	NE	0	0	43	21	12	0	10	2	2	10
0500-0600	7	13	N NE	0	0	43	10	26	5	2	2	2	10
0600-0700	5	13	NE	0	0	48	7	24	5	2	2	2	10
0700-0800	6	13	NE N	0	2	52	7	7	7	5	2	5	12
0800-0900	6	13	N E NE	0	0	50	7	5	2	7	7	2	17
0900-1000	7	13	N NW E	0	0	45	6	5	5	5	5	14	23
1000-1100	6	13	N NW	0	0	23	2	0	0	9	5	20	41
1100-1200	7	13	NW SW	0	0	12	0	0	0	5	17	21	45
1200-1300	7	13	NW	0	0	5	0	0	0	5	11	18	61
1300-1400	6	13	NW	0	0	17	0	0	0	0	10	17	57
1400-1500	7	13	NW	0	0	19	0	0	0	0	5	12	65
1500-1600	6	13	NW	0	0	31	0	0	0	0	5	7	57
1600-1700	6	13	NW	0	0	36	0	2	0	0	0	7	55
1700-1800	6	13	NW N	0	0	59	0	0	2	0	5	7	27
1800-1900	6	8	NE SE N NW	0	0	55	17	5	5	0	2	5	10
1900-2000	6	8	N SE NE NW	0	0	57	17	5	5	0	2	5	7
2000-2100	7	13	N NE NW	0	0	45	27	5	0	7	0	0	15
2100-2200	7	13	N NW NE	0	0	33	33	12	0	0	0	5	17
2200-2300	6	13	N NE	0	2	33	29	12	2	0	0	12	10
2300-2400	7	18	NE	0	2	40	31	10	0	0	0	10	7

SITE 20 PAD D, SURFACE APR,1966

TIME	WIND SPEED (KNOTS) AVG	MAX	MAX DIR	CALM	DIRECTION VAR	N	NE	PERCENTAGE E	SE	DISTRIBUTION S	SW	W	NW
0000-0200	6	18	NE	0	0	44	20	18	0	2	0	1	14
0200-0400	7	18	NE	0	0	40	27	13	1	4	1	0	13
0400-0600	7	18	NE	0	0	43	15	19	2	6	2	2	10
0600-0800	6	13	NE N	0	1	50	7	15	6	4	2	4	11
0800-1000	7	13	N E NE NW	0	0	48	4	5	4	6	6	8	20
1000-1200	6	13	N NW SW	0	0	17	1	0	0	7	10	21	43
1200-1400	7	13	NW	0	0	10	0	0	0	2	10	17	59
1400-1600	6	13	NW	0	0	25	0	0	0	0	5	9	61
1600-1800	6	13	NW N	0	0	47	0	1	1	0	2	7	41
1800-2000	6	8	NE SE N NW	0	0	56	17	5	5	0	2	5	9
2000-2200	7	13	N NE NW	0	0	39	30	9	0	4	0	2	16
2200-2400	7	18	NE	0	2	37	30	11	1	0	0	11	8

SITE 20 PAD D, SURFACE APR,1966

TIME	WIND SPEED (KNOTS) AVG	MAX	MAX DIR	CALM	DIRECTION PERCENTAGE DISTRIBUTION VAR	N	NE	E	SE	S	SW	W	NW
0000-0300	6	18	NE	0	0	43	21	17	0	2	1	1	15
0300-0600	7	18	NE	0	0	42	21	17	2	6	2	2	10
0600-0900	6	13	NE N E	0	1	50	7	12	5	5	4	3	13
0900-1200	7	13	N NW E	0	0	27	1	2	2	6	8	18	36
1200-1500	7	13	SW NW	0	0	13	0	0	0	2	9	16	61
1500-1800	6	13	NW N	0	0	42	0	1	1	0	3	7	46
1800-2100	6	13	N NE NW	0	0	52	21	5	3	2	2	3	11
2100-2400	7	18	NE	0	2	36	31	11	1	0	0	9	11

SITE 20 PAD D, SURFACE APR, 1966

TIME	WIND SPEED (KNOTS) AVG	MAX	MAX DIR	CALM	DIRECTION PERCENTAGE DISTRIBUTION VAR	N	NE	E	SE	S	SW	W	NW
0000-0400	7	18	NE	0	0	42	24	15	1	3	1	1	14
0400-0800	6	18	NE	0	1	46	11	17	4	5	2	3	10
0800-1200	7	13	N E NE NW SW	0	0	32	2	2	2	6	8	15	32
1200-1600	7	13	NW	0	0	18	0	0	0	1	8	13	60
1600-2000	6	13	NW N	0	0	52	9	3	3	0	2	6	25
2000-2400	7	18	NE	0	1	38	30	10	1	2	0	7	12

SITE 20 PAD D, SURFACE APR, 1966

TIME	WIND SPEED (KNOTS) AVG	MAX	MAX DIR	CALM	DIRECTION PERCENTAGE DISTRIBUTION VAR	N	NE	E	SE	S	SW	W	NW
0000-0600	7	18	NE	0	0	42	21	17	1	4	1	1	12
0600-1200	6	13	NE N E	0	0	38	4	7	3	6	6	11	25
1200-1800	6	13	NW SW NW N	0	0	27	0	0	0	1	6	11	54
1800-2400	6	18	NE	0	1	44	26	8	2	1	1	6	11

SITE 40 VHF APR,1966

TIME	WIND SPEED (KNOTS) AVG	WIND SPEED (KNOTS) MAX	MAX DIR	CALM	VAR	N	NE	E	SE	S	SW	W	NW
					DIRECTION PERCENTAGE DISTRIBUTION								
0000-0030	4	14	NW	0	3	20	3	7	13	7	23	10	13
0030-0100	5	20	NW	0	0	16	3	3	13	13	16	13	23
0100-0130	5	14	NW N	0	0	20	3	7	3	20	20	7	20
0130-0200	5	14	NW N	0	0	17	7	7	7	17	20	7	20
0200-0230	5	14	NW N	0	0	20	7	10	13	7	23	7	13
0230-0300	5	14	N	0	0	27	7	10	10	13	3	13	17
0300-0330	6	14	NW	0	0	20	10	7	13	10	13	3	23
0330-0400	5	14	NW	0	0	23	7	10	17	0	17	10	17
0400-0430	5	14	NW	0	0	20	10	17	17	3	7	3	23
0430-0500	5	14	NW	0	0	20	7	10	30	0	13	3	17
0500-0530	5	14	NW	0	3	30	0	17	27	3	10	3	7
0530-0600	5	14	N NW	0	0	24	7	21	21	0	14	3	10
0600-0630	5	14	N NW	0	0	20	3	13	23	10	10	7	13
0630-0700	5	14	N NW	0	3	13	20	7	27	0	3	3	23
0700-0730	5	20	NW	0	3	23	10	23	13	0	0	3	23
0730-0800	6	20	N NW	0	0	23	13	23	10	0	0	10	20
0800-0830	7	20	NW	0	0	37	7	20	10	0	3	7	17
0830-0900	7	20	N NW	0	3	27	7	23	3	0	0	17	20
0900-0930	8	20	N NW	0	3	31	10	3	0	3	0	10	38
0930-1000	10	26	S	0	0	21	7	0	3	3	0	14	52
1000-1030	10	20	N NW S	0	0	28	0	0	0	3	0	17	52
1030-1100	11	20	NW SW	0	0	10	0	0	0	0	3	31	55
1100-1130	13	26	NW	0	0	0	3	0	0	0	0	28	69
1130-1200	13	26	NW	0	0	7	0	0	0	0	0	28	66
1200-1230	14	20	NW W	0	0	3	0	0	0	0	0	24	72
1230-1300	15	26	NW	0	0	0	0	0	0	0	0	21	79
1300-1330	15	26	NW	0	0	0	0	0	0	0	0	24	76

SITE 40 VHF APR,1966

TIME	WIND SPEED (KNOTS) AVG	MAX	MAX DIR	CALM	DIRECTION PERCENTAGE DISTRIBUTION VAR	N	NE	E	SE	S	SW	W	NW
1330-1400	16	26	NW	0	0	0	0	0	0	0	0	33	67
1400-1430	16	26	NW	0	0	0	0	0	0	0	0	30	70
1430-1500	15	26	NW	0	0	3	0	0	0	0	0	33	63
1500-1530	14	26	NW	0	0	0	0	0	0	0	0	30	70
1530-1600	14	26	NW	0	0	3	0	0	0	0	0	27	70
1600-1630	13	26	W	0	0	3	0	0	0	0	0	30	67
1630-1700	12	26	NW	0	0	0	0	0	0	0	3	27	70
1700-1730	12	26	NW	0	0	3	0	0	0	0	3	27	67
1730-1800	10	20	NW	0	0	3	0	0	0	0	0	37	60
1800-1830	8	20	NW	0	0	10	0	0	0	0	13	30	47
1830-1900	7	14	NW	0	0	7	0	0	0	3	13	27	50
1900-1930	6	14	NW	0	3	7	0	0	3	0	27	7	53
1930-2000	6	14	W NW	0	0	20	0	0	7	7	20	17	30
2000-2030	5	14	SE N	0	0	23	3	0	13	3	17	13	27
2030-2100	5	14	SE N	0	0	23	3	3	13	10	17	20	10
2100-2130	5	14	SE NW	0	0	17	0	0	17	7	30	7	23
2130-2200	5	14	SE N NW	0	0	23	0	0	13	20	23	10	10
2200-2230	6	14	NW N	0	0	17	0	3	20	17	20	7	17
2230-2300	6	20	W	0	7	13	7	3	17	13	17	7	17
2300-2330	5	14	W W NW	0	0	20	3	3	27	7	20	10	10
2330-2400	5	14	NW N	0	0	10	13	10	17	10	17	13	10

SITE 40 VHF APR,1966

TIME	WIND SPEED (KNOTS) AVG	MAX	MAX DIR	CALM	DIRECTION PERCENTAGE DISTRIBUTION VAR	N	NE	E	SE	S	SW	W	NW
0000-0100	5	20	NW	0	2	18	3	5	13	10	20	11	18
0100-0200	5	14	NW N	0	0	18	5	7	5	18	20	7	20
0200-0300	5	14	NW N	0	0	23	7	10	12	10	13	10	15
0300-0400	5	14	NW	0	0	22	8	8	15	5	15	7	20
0400-0500	5	14	NW	0	0	20	8	13	23	2	10	3	20
0500-0600	5	14	NW N	0	2	27	3	19	24	2	12	3	8
0600-0700	5	14	W NW	0	2	17	12	10	25	5	7	5	18
0700-0800	6	20	NW N	0	2	23	12	23	12	0	0	7	22
0800-0900	7	20	NW N	0	2	32	7	22	7	0	2	12	18
0900-1000	9	26	S	0	2	26	9	2	2	3	0	12	45
1000-1100	11	20	W NW S SW	0	0	19	0	0	0	2	2	24	53
1100-1200	13	26	NW	0	0	3	2	0	0	0	0	28	67
1200-1300	15	26	NW	0	0	2	0	0	0	0	0	22	76
1300-1400	16	26	NW	0	0	0	0	0	0	0	0	29	71
1400-1500	16	26	NW	0	0	2	0	0	0	0	0	32	67
1500-1600	14	26	NW	0	0	2	0	0	0	0	0	28	70
1600-1700	13	26	W NW	0	0	2	0	0	0	0	2	28	68
1700-1800	11	26	NW	0	0	3	0	0	0	0	2	32	63
1800-1900	7	20	NW	0	0	8	0	0	0	2	13	28	48
1900-2000	6	14	NW N	0	2	13	0	0	5	3	23	12	42
2000-2100	5	14	SE N	0	0	23	3	2	13	7	17	17	18
2100-2200	5	14	SE NW W	0	0	20	0	0	15	13	27	8	17
2200-2300	6	20	W	0	3	15	3	3	18	15	18	7	17
2300-2400	5	14	W W NW	0	0	15	8	7	22	8	18	12	10

SITE 40 VHF APR,1966

TIME	WIND SPEED (KNOTS AVG	MAX	MAX DIR	CALM	DIRECTION VAR	PERCENTAGE N	NE	E	SE	DISTRIBUTION S	SW	W	NW
0000-0200	5	20	NW	0	1	18	4	6	9	14	20	9	19
0200-0400	5	14	NW N	0	0	22	7	9	13	7	14	8	17
0400-0600	5	14	NW N	0	1	24	6	16	24	2	11	3	14
0600-0800	5	20	NW N	0	2	20	12	17	18	2	3	6	20
0800-1000	8	26	S	0	2	29	8	12	4	2	1	12	31
1000-1200	12	26	NW	0	0	11	1	0	0	1	1	26	60
1200-1400	15	26	NW	0	0	1	0	0	0	0	0	26	74
1400-1600	15	26	NW	0	0	2	0	0	0	0	0	30	68
1600-1800	12	26	N NW	0	0	2	0	0	0	0	2	30	66
1800-2000	7	20	NW	0	1	11	0	0	2	2	18	20	45
2000-2200	5	14	SE N NW	0	0	22	2	1	14	10	22	13	17
2200-2400	5	20	N	0	2	15	6	5	20	12	18	9	13

SITE 40 VHF APR, 1966

TIME	WIND SPEED (KNOTS) AVG	MAX	MAX DIR	CALM	DIRECTION VAR	N	NE	PERCENTAGE E	SE	DISTRIBUTION S	SW	W	NW
0000-0300	5	20	NW	0	1	20	5	7	10	13	18	9	18
0300-0600	5	14	NW N	0	1	23	7	13	21	3	12	4	16
0600-0900	6	20	NW N	0	2	24	10	18	14	2	3	8	19
0900-1200	11	26	S NW	0	1	16	3	1	1	2	1	21	55
1200-1500	15	26	NW	0	0	1	0	0	0	0	0	28	71
1500-1800	12	26	NW N	0	0	2	0	0	0	0	1	29	67
1800-2100	6	20	NW	0	1	15	1	1	6	4	18	19	36
2100-2400	5	20	N	0	1	17	4	3	18	12	21	9	14

SITE 40 VHF APR,1966

TIME	WIND SPEED (KNOTS) AVG	MAX	MAX DIR	CALM	DIRECTION PERCENTAGE DISTRIBUTION VAR	N	NE	E	SE	S	SW	W	NW
0000-0400	5	20	NW	0	0	20	6	7	11	11	17	9	18
0400-0800	5	20	NW N	0	1	22	9	16	21	2	7	5	17
0800-1200	10	26	S NW	0	1	20	4	6	2	1	1	19	46
1200-1600	15	26	NW	0	0	1	0	0	0	0	0	28	71
1600-2000	9	26	N NW	0	0	7	0	0	1	1	10	25	55
2000-2400	5	20	N	0	1	18	4	3	17	11	20	11	15

SITE 40 VHF APR,1966

TIME	WIND SPEED (KNOTS) AVG	MAX	MAX DIR	CALM	DIRECTION VAR	N	NE	PERCENTAGE E	SE	DISTRIBUTION S	SW	W	NW
0000-0600	5	20	NW	0	1	21	6	10	15	8	15	7	17
0600-1200	8	26	S NW	0	1	20	7	10	8	2	2	14	37
1200-1800	14	26	NW N	0	0	2	0	0	0	0	1	29	69
1800-2400	6	20	NW N	0	1	16	2	2	12	8	19	14	25

SITE 46 RANGE OPERATIONS APR,1966

TIME	WIND SPEED (KNOTS) AVG	MAX	MAX DIR	CALM	DIRECTION PERCENTAGE DISTRIBUTION VAR	N	NE	E	SE	S	SW	W	NW
0000-0030	8	18	NW	0	0	23	23	7	3	0	7	7	30
0030-0100	8	18	NW	0	0	27	20	3	3	0	10	0	37
0100-0130	8	18	NW	0	0	20	27	0	7	0	7	0	40
0130-0200	8	18	NW	0	0	13	23	7	7	3	0	3	43
0200-0230	8	18	NW	0	3	20	27	7	0	3	0	7	33
0230-0300	7	13	NW N E	0	0	27	27	7	3	3	0	3	30
0300-0330	8	18	NW	0	0	20	27	0	0	7	0	3	43
0330-0400	7	18	NW	0	0	10	30	7	0	7	0	7	40
0400-0430	8	18	NW	0	0	7	30	3	0	7	7	3	43
0430-0500	8	18	NW	0	0	10	37	3	3	7	0	0	40
0500-0530	8	18	NW	0	0	23	17	13	10	0	0	0	37
0530-0600	8	18	NW	0	3	27	20	10	7	3	0	3	27
0600-0630	7	18	NW	0	3	27	23	10	0	3	0	3	30
0630-0700	7	18	NW	0	3	20	20	10	0	7	3	0	37
0700-0730	7	18	NW NE	0	3	13	33	7	0	3	3	0	37
0730-0800	7	18	NW	0	0	17	17	13	3	3	0	7	40
0800-0830	7	18	NW	0	3	10	20	3	10	0	7	3	43
0830-0900	7	18	NW	0	7	20	20	0	7	0	3	3	40
0900-0930	7	13	NW	0	7	20	17	0	3	0	7	3	43
0930-1000	8	18	NW	0	10	20	10	0	0	0	13	3	43
1000-1030	8	18	NW	0	7	14	0	0	0	0	10	17	52
1030-1100	8	18	NW	0	10	3	0	0	0	0	14	7	66
1100-1130	8	18	NW	0	7	3	0	0	0	3	17	7	62
1130-1200	8	18	NW	0	14	3	0	0	0	3	14	3	62
1200-1230	9	18	NW	0	14	7	0	0	0	3	10	0	66
1230-1300	9	18	NW	0	7	3	0	0	0	3	10	14	62
1300-1330	9	18	NW	0	0	7	0	0	0	0	7	17	69

SITE 46 RANGE OPERATIONS APR.1966

TIME	WIND SPEED (KNOTS) AVG	MAX	MAX DIR	CALM	DIRECTION PERCENTAGE DISTRIBUTION VAR	N	NE	E	SE	S	SW	W	NW
1330-1400	9	18	NW	0	0	0	0	0	0	0	10	14	76
1400-1430	9	18	NW	0	0	0	0	0	0	0	10	17	72
1430-1500	9	18	NW	0	0	0	0	0	0	0	10	20	70
1500-1530	9	18	NW	0	3	3	0	0	0	0	13	13	67
1530-1600	9	18	NW	0	3	3	0	0	0	0	13	13	67
1600-1630	10	18	NW	0	3	3	0	0	0	0	3	13	77
1630-1700	8	18	NW	0	3	3	0	0	0	0	3	[illegible]	80
1700-1730	8	18	NW	0	3	0	0	0	0	0	7	[illegible]	83
1730-1800	7	18	NW	0	3	3	0	0	0	0	7	[illegible]	[illegible]
1800-1830	7	13	NW	0	0	20	3	3	0	0	3	7	[illegible]
1830-1900	7	13	NW	0	3	23	7	0	0	3	7	0	[illegible]
1900-1930	7	13	NW	0	0	30	10	0	3	0	3	3	[illegible]
1930-2000	7	18	NW	0	0	27	17	0	3	0	3	3	47
2000-2030	8	18	NW	0	0	33	13	3	3	0	0	3	43
2030-2100	7	18	NW	0	0	23	17	13	0	0	0	7	40
2100-2130	7	18	NW	0	0	40	10	10	3	0	0	10	27
2130-2200	8	18	NW	0	0	30	13	10	7	0	0	7	33
2200-2230	8	18	NW	0	0	27	20	10	0	0	3	3	37
2230-2300	8	18	NW	0	0	33	17	17	0	0	3	3	27
2300-2330	8	18	NW	0	0	17	23	17	0	0	3	7	33
2330-2400	7	18	NW	0	0	20	20	7	7	0	10	3	33

SITE 46 RANGE OPERATIONS APR,1966

TIME	WIND SPEED (KNOTS) AVG	MAX	MAX DIR	CALM	DIRECTION PERCENTAGE DISTRIBUTION VAR	N	NE	E	SE	S	SW	W	NW
0000-0100	8	18	NW	0	0	25	22	5	3	0	8	3	33
0100-0200	8	18	NW	0	0	17	25	3	7	2	3	2	42
0200-0300	7	18	NW	0	2	23	27	7	2	3	0	5	32
0300-0400	8	18	NW	0	0	15	28	3	0	7	0	5	42
0400-0500	8	18	NW	0	0	8	33	3	2	7	3	2	42
0500-0600	8	18	NW	0	2	25	18	12	8	2	0	2	32
0600-0700	7	18	NW	0	3	23	22	10	0	5	2	2	33
0700-0800	7	18	NW NE	0	2	15	25	10	2	3	2	3	38
0800-0900	7	18	NW	0	5	15	20	2	8	0	5	3	42
0900-1000	7	18	NW	0	8	20	13	0	2	0	10	3	43
1000-1100	8	18	NW	0	9	9	0	0	0	0	12	12	59
1100-1200	8	18	NW	0	10	3	0	0	0	3	16	5	62
1200-1300	9	18	NW	0	10	5	0	0	0	3	10	7	64
1300-1400	9	18	NW	0	0	3	0	0	0	0	9	16	72
1400-1500	9	18	NW	0	0	0	0	0	0	0	10	19	71
1500-1600	9	18	NW	0	3	3	0	0	0	0	13	13	67
1600-1700	9	18	NW	0	3	3	0	0	0	0	3	12	78
1700-1800	8	18	NW	0	3	2	0	0	0	0	7	3	85
1800-1900	7	13	NW	0	2	22	5	2	0	2	5	3	60
1900-2000	7	18	NW	0	0	28	13	0	3	0	3	3	48
2000-2100	7	18	NW	0	0	28	15	8	2	0	0	5	42
2100-2200	7	18	NW	0	0	35	12	10	5	0	0	8	30
2200-2300	8	18	NW	0	0	30	18	13	0	0	3	3	32
2300-2400	7	18	NW	0	0	18	22	12	3	0	7	5	33

SITE 46 RANGE OPERATIONS APR,1966

TIME	WIND SPEED (KNOTS) AVG	MAX	MAX DIR	CALM	DIRECTION VAR	N	NE	PERCENTAGE E	SE	DISTRIBUTION S	SW	W	NW
0000-0200	8	18	NW	0	0	21	23	4	5	1	6	2	38
0200-0400	7	18	NW	0	1	19	27	5	1	5	0	5	37
0400-0600	8	18	NW	0	1	17	26	7	5	4	2	2	37
0600-0800	7	18	NW NE	0	2	19	23	10	1	4	2	2	36
0800-1000	7	18	NW	0	7	17	17	1	5	0	7	3	42
1000-1200	8	18	NW	0	9	6	0	0	0	2	14	9	60
1200-1400	9	18	NW	0	5	4	0	0	0	2	9	11	68
1400-1600	9	18	NW	0	2	2	0	0	0	0	12	16	69
1600-1800	8	18	NW	0	3	2	0	0	0	0	5	7	82
1800-2000	7	18	NW	0	1	25	9	1	2	1	4	3	54
2000-2200	7	18	NW	0	0	32	13	9	3	0	0	7	36
2200-2400	8	18	NW	0	0	24	20	13	2	0	5	4	32

SITE 46 RANGE OPERATIONS APR, 1966

TIME	WIND SPEED (KNOTS) AVG	MAX	MAX DIR	CALM	DIRECTION PERCENTAGE DISTRIBUTION VAR	N	NE	E	SE	S	SW	W	NW
0000-0300	7	18	NW	0	1	22	24	5	4	2	4	3	35
0300-0600	8	18	NW	0	1	16	27	6	3	5	1	3	38
0600-0900	7	18	NW NE	0	3	18	22	7	3	3	3	3	38
0900-1200	8	18	NW	0	9	11	5	0	1	1	13	7	55
1200-1500	9	18	NW	0	3	3	0	0	0	1	10	14	67
1500-1800	9	18	NW	0	3	3	0	0	0	0	8	9	77
1800-2100	7	18	NW	0	1	26	11	3	2	1	3	4	50
2100-2400	8	18	NW	0	0	28	17	12	3	0	3	6	32

SITE 46 RANGE OPERATIONS APR,1966

TIME	WIND SPEED (KNOTS) AVG	MAX	MAX DIR	CALM	DIRECTION PERCENTAGE DISTRIBUTION VAR	N	NE	E	SE	S	SW	W	NW
0000-0400	7	18	NW	0	0	20	25	5	3	3	3	4	37
0400-0800	7	18	NW NE	0	2	18	25	9	3	4	2	2	36
0800-1200	8	18	NW	0	8	12	8	0	3	1	11	6	51
1200-1600	9	18	NW	0	3	3	0	0	0	1	11	14	69
1600-2000	8	18	NW	0	2	14	5	0	1	0	5	5	68
2000-2400	8	18	NW	0	0	28	17	11	2	0	2	5	34

SITE 46   RANGE OPERATIONS   APR,1966

TIME	WIND SPEED (KNOTS) AVG	MAX	MAX DIR	CALM	DIRECTION PERCENTAGE DISTRIBUTION VAR	N	NE	E	SE	S	SW	W	NW
0000-0600	8	18	NW	0	1	19	26	6	4	3	2	3	37
0600-1200	7	18	NW NE	0	6	14	13	4	2	2	8	5	46
1200-1800	9	18	NW	0	3	3	0	0	0	1	9	12	73
1800-2400	7	18	NW	0	0	27	14	7	2	0	3	5	41

SITE 55 REMOTE RADAR, SURFACE APR,1966

TIME	WIND SPEED (KNOTS) AVG	MAX	MAX DIR	CALM	DIRECTION PERCENTAGE DISTRIBUTION VAR	N	NE	E	SE	S	SW	W	NW
0000-0030	10	28	N	0	0	60	23	3	10	0	0	0	3
0030-0100	10	28	N	0	0	63	20	3	13	0	0	0	0
0100-0130	10	33	N	0	0	60	17	3	13	0	0	0	7
0130-0200	10	28	N	0	0	57	20	7	10	3	0	0	3
0200-0230	11	23	N	0	0	53	23	3	10	7	0	0	3
0230-0300	12	23	N	0	0	60	20	3	7	10	0	0	0
0300-0330	12	23	N	0	0	53	23	3	10	7	0	0	3
0330-0400	12	23	N	0	0	53	27	0	13	3	0	0	3
0400-0430	11	23	N	0	0	60	20	3	13	3	0	0	0
0430-0500	11	23	N	0	0	60	20	0	17	3	0	0	0
0500-0530	11	23	N	0	0	53	30	0	17	0	0	0	0
0530-0600	11	28	N	0	0	53	23	0	20	3	0	0	0
0600-0630	11	28	N	0	0	53	27	0	13	7	0	0	0
0630-0700	10	28	N	0	0	47	27	3	13	7	0	0	3
0700-0730	10	23	N SE	0	0	53	23	3	17	3	0	0	0
0730-0800	10	18	NE SE N	0	0	60	17	3	13	7	0	0	0
0800-0830	10	23	N	0	0	50	20	3	17	7	0	0	3
0830-0900	9	18	NE N NW	0	0	57	17	0	13	10	0	0	3
0900-0930	9	23	N	0	0	59	7	3	10	17	3	0	0
0930-1000	9	23	N	0	3	62	3	0	14	17	0	0	0
1000-1030	10	23	N	0	4	64	0	0	11	18	0	0	4
1030-1100	11	23	N	0	3	59	0	0	14	21	0	0	3
1100-1130	10	23	N	0	4	57	0	0	11	21	0	0	7
1130-1200	12	28	N	0	3	52	0	0	7	28	0	0	10
1200-1230	13	28	N	0	3	59	0	0	7	24	0	0	7
1230-1300	12	28	N	0	3	59	0	0	7	17	0	0	14
1300-1330	13	23	N	0	0	69	0	0	3	10	7	0	10

SITE 55 REMOTE RADAR, SURFACE APR,1966

TIME	WIND SPEED (KNOTS) AVG	MAX	MAX DIR	CALM	DIRECTION PERCENTAGE DISTRIBUTION VAR	N	NE	E	SE	S	SW	W	NW
1330-1400	14	28	N	0	0	66	0	0	0	14	7	3	10
1400-1430	13	33	N	0	0	66	0	0	0	14	7	0	14
1430-1500	14	28	N	0	0	80	0	0	0	7	10	3	0
1500-1530	14	28	N	0	0	80	0	0	3	3	7	7	0
1530-1600	13	28	N	0	0	80	0	0	3	3	0	10	3
1600-1630	15	28	N	0	0	80	0	0	3	3	0	0	13
1630-1700	15	33	N	0	0	87	0	0	3	3	0	0	7
1700-1730	15	33	N	0	0	90	0	0	3	3	0	0	3
1730-1800	14	33	N	0	0	87	0	0	3	3	0	0	7
1800-1830	13	33	N	0	0	90	3	0	3	3	0	0	0
1830-1900	13	33	N	0	0	87	7	0	3	3	0	0	0
1900-1930	12	33	N	0	0	83	7	3	3	3	0	0	0
1930-2000	12	33	N	0	0	80	10	3	7	0	0	0	0
2000-2030	12	28	N	0	0	70	20	0	7	0	0	0	3
2030-2100	11	28	N	0	0	73	23	0	3	0	0	0	0
2100-2130	11	28	N	0	0	73	23	0	0	3	0	0	0
2130-2200	11	28	N	0	0	70	20	3	3	0	0	0	3
2200-2230	12	28	N	0	0	60	27	3	7	0	0	0	3
2230-2300	12	28	N	0	0	53	33	0	7	3	0	0	3
2300-2330	12	23	N	0	0	50	37	0	7	3	0	0	3
2330-2400	12	28	N	0	0	53	33	3	7	0	0	0	3

SITE 55 REMOTE RADAR, SURFACE APR,1966

TIME	WIND SPEED (KNOTS) AVG	MAX	MAX DIR	CALM	DIRECTION PERCENTAGE DISTRIBUTION VAR	N	NE	E	SE	S	SW	W	NW
0000-0100	10	28	N	0	0	62	22	3	12	0	0	0	2
0100-0200	10	33	N	0	0	58	18	5	12	2	0	0	5
0200-0300	11	23	N	0	0	57	22	3	8	8	0	0	2
0300-0400	12	23	N	0	0	53	25	2	12	5	0	0	3
0400-0500	11	23	N	0	0	60	20	2	15	3	0	0	0
0500-0600	11	28	N	0	0	53	27	0	18	2	0	0	0
0600-0700	11	28	N	0	0	50	27	2	13	7	0	0	2
0700-0800	10	23	N SE	0	0	57	20	3	15	5	0	0	0
0800-0900	9	23	N	0	0	53	18	2	15	8	0	0	3
0900-1000	9	23	N	0	2	60	5	2	12	17	2	0	0
1000-1100	11	23	N	0	4	61	0	0	12	19	0	0	4
1100-1200	11	28	N	0	4	54	0	0	9	25	0	0	9
1200-1300	13	28	N	0	3	59	0	0	7	21	0	0	10
1300-1400	13	28	N	0	0	67	0	0	2	12	7	2	10
1400-1500	13	33	N	0	0	73	0	0	0	10	8	2	7
1500-1600	14	28	N	0	0	80	0	0	3	3	3	8	2
1600-1700	15	33	N	0	0	83	0	0	3	3	0	0	10
1700-1800	14	33	N	0	0	88	0	0	3	3	0	0	5
1800-1900	13	33	N	0	0	88	5	0	3	3	0	0	0
1900-2000	12	33	N	0	0	82	8	3	5	2	0	0	0
2000-2100	11	28	N	0	0	72	22	0	5	0	0	0	2
2100-2200	11	28	N	0	0	72	22	2	2	2	0	0	2
2200-2300	12	28	N	0	0	57	30	2	7	2	0	0	3
2300-2400	12	28	N	0	0	52	35	2	7	2	0	0	3

SITE 55 REMOTE RADAR, SURFACE APR,1966

TIME	WIND SPEED (KNOTS) AVG	MAX	MAX DIR	CALM	DIRECTION VAR	N	NE	PERCENTAGE F	SE	DISTRIBUTION S	SW	W	NW
0000-0200	10	33	N	0	0	60	20	4	12	1	0	0	3
0200-0400	12	23	N	0	0	55	23	2	10	7	0	0	2
0400-0600	11	28	N	0	0	57	23	1	17	2	0	0	0
0600-0800	10	28	N	0	0	53	23	2	14	6	0	0	1
0800-1000	9	23	N	0	1	57	12	2	14	13	1	0	2
1000-1200	11	28	N	0	4	58	0	0	11	22	0	0	6
1200-1400	13	28	N	0	2	63	0	0	4	16	3	1	10
1400-1600	13	33	N	0	0	76	0	0	2	7	6	5	4
1600-1800	15	33	N	0	0	86	0	0	3	3	0	0	7
1800-2000	13	33	N	0	0	85	7	2	4	2	0	0	0
2000-2200	11	28	N	0	0	72	22	1	3	1	0	0	2
2200-2400	12	28	N	0	0	54	32	2	7	2	0	0	3

SITE 55 REMOTE RADAR, SURFACE APR,1966

TIME	WIND SPEED (KNOTS) AVG	MAX	MAX DIR	CALM	DIRECTION PERCENTAGE DISTRIBUTION VAR	N	NE	E	SE	S	SW	W	NW
0000-0300	11	33	N	0	0	59	21	4	11	3	0	0	3
0300-0600	11	28	N	0	0	56	24	1	15	3	0	0	1
0600-0900	10	28	N	0	0	53	22	2	14	7	0	0	2
0900-1200	10	28	N	0	3	59	2	1	11	20	1	0	4
1200-1500	13	33	N	0	1	66	0	0	3	14	5	1	9
1500-1800	14	33	N	0	0	84	0	0	3	3	1	3	6
1800-2100	12	33	N	0	0	81	12	1	4	2	0	0	1
2100-2400	11	28	N	0	0	60	29	2	5	2	0	0	3

SITE 55 REMOTE RADAR, SURFACE APR, 1966

TIME	WIND SPEED (KNOTS) AVG	MAX	MAX DIR	CALM	DIRECTION PERCENTAGE DISTRIBUTION VAR	N	NE	E	SE	S	SW	W	NW
0000-0400	11	33	V	0	0	57	22	3	11	4	0	0	3
0400-0800	11	28	V	0	0	55	23	2	15	4	0	0	0
0800-1200	10	28	V	0	2	57	6	1	12	17	0	0	4
1200-1600	13	33	V	0	1	70	0	0	3	11	5	3	7
1600-2000	14	33	V	0	0	85	3	1	4	3	0	0	4
2000-2400	11	28	V	0	0	63	27	1	5	1	0	0	2

SITE 55 REMOTE RADAR, SURFACE APR,1966

TIME	WIND SPEED (KNOTS) AVG	MAX	MAX DIR	CALM	DIRECTION PERCENTAGE DISTRIBUTION VAR	N	NE	E	SE	S	SW	W	NW
0000-0600	11	33	N	0	0	57	22	2	13	3	0	0	2
0600-1200	10	28	N	0	1	56	12	1	13	13	0	0	3
1200-1800	14	33	N	0	1	75	0	0	3	9	3	2	7
1800-2400	12	33	N	0	0	70	20	1	5	2	0	0	2

SITE 1 TARGET RIDGE JULY, 1966

TIME	WIND SPEED (KNOTS) AVG	MAX	MAX DIR	CALM	DIRECTION PERCENTAGE DISTRIBUTION VAR	N	NE	E	SE	S	SW	W	NW
0000-0030	7	13	NW	0	0	19	5	5	0	5	0	19	48
0030-0100	7	13	NW	0	0	19	10	5	0	0	0	14	52
0100-0130	7	13	NW	0	0	19	5	10	0	0	0	10	57
0130-0200	7	13	NW	0	0	19	5	10	0	0	0	5	62
0200-0230	7	13	NW	0	0	14	10	10	0	0	0	14	52
0230-0300	7	13	NW W	0	0	14	10	5	0	0	5	10	57
0300-0330	6	13	NW	0	0	10	14	5	0	0	5	10	57
0330-0400	5	8	NW W N E	0	0	19	5	10	0	0	0	10	57
0400-0430	6	13	NW	0	0	20	5	10	0	0	0	5	60
0430-0500	5	13	NW	0	0	30	15	10	0	0	0	5	40
0500-0530	5	13	NW	0	0	20	15	10	0	0	0	5	50
0530-0600	5	13	NW N	0	0	20	15	10	0	0	0	10	45
0600-0630	5	13	N	0	0	33	10	10	0	0	0	10	38
0630-0700	5	8	W NW NE N	0	0	19	14	0	5	0	5	10	48
0700-0730	5	13	NW	0	0	19	14	5	0	0	5	5	52
0730-0800	4	8	W NW NE N	0	0	10	19	5	0	0	0	10	57
0800-0830	5	8	W NW NE N	0	0	14	19	0	0	0	5	10	52
0830-0900	6	13	NW	0	0	24	10	0	0	0	0	24	43
0900-0930	6	13	NW	0	0	19	10	0	0	0	5	14	52
0930-1000	5	8	W NW NE	0	0	14	10	5	0	0	5	14	52
1000-1030	6	13	NW	0	0	19	10	0	0	0	5	19	48
1030-1100	6	13	NW	0	0	19	5	0	0	0	5	24	48
1100-1130	6	13	NW	0	0	10	5	0	0	0	5	29	52

SITE 1 TARGET RIDGE JULY,1966

TIME	WIND SPEED (KNOTS) AVG	MAX	MAX DIR	CALM	DIRECTION PERCENTAGE DISTRIBUTION VAR	N	NE	E	SE	S	SW	W	NW
1130-1200	7	13	NW	0	0	10	5	0	0	0	5	24	57
1200-1230	6	13	NW	0	0	10	5	0	0	0	5	29	52
1230-1300	7	13	NW	0	0	0	14	0	0	0	9	27	50
1300-1330	7	13	NW NE	0	0	5	14	0	0	0	9	23	50
1330-1400	7	13	NW	0	0	9	9	0	0	0	0	18	64
1400-1430	6	13	NW	0	0	14	9	0	0	0	0	23	55
1430-1500	6	13	NW	0	0	18	14	0	0	0	0	27	41
1500-1530	7	13	NW	0	0	19	5	0	0	0	0	29	48
1530-1600	7	13	NW	0	0	18	5	0	0	0	0	32	45
1600-1630	7	13	NW	0	0	18	9	0	0	0	0	23	50
1630-1700	7	13	NW	0	0	18	9	0	0	0	0	23	50
1700-1730	5	13	NW	0	0	14	10	0	0	0	0	24	52
1730-1800	6	13	NW	0	0	0	20	0	0	0	0	30	50
1800-1830	8	13	NW	0	0	26	6	0	0	0	0	16	52
1830-1900	8	13	NW	0	0	14	14	0	0	0	0	19	52
1900-1930	7	13	NW	0	0	14	14	0	0	0	0	24	48
1930-2000	8	13	NW	0	0	10	19	0	0	0	0	19	52
2000-2030	7	13	NW	0	0	10	14	5	0	0	0	19	52
2030-2100	7	13	NW	0	0	10	14	5	0	0	0	14	57
2100-2130	7	13	NW	0	0	14	5	10	0	0	0	14	57
2130-2200	7	13	NW	0	0	19	5	10	0	0	0	14	52
2200-2230	7	13	NW	0	0	19	5	10	0	0	0	14	52
2230-2300	7	13	NW W	0	0	19	5	10	0	0	0	19	48
2300-2330	7	13	NW W	0	0	14	5	10	0	0	0	14	57
2330-2400	7	13	W NW	0	0	19	5	10	0	0	0	14	52

SITE 1 TARGET RIDGE JULY,1966

TIME	WIND SPEED (KNOTS) AVG	MAX	MAX DIR		CALM	DIRECTION PERCENTAGE DISTRIBUTION VAR	N	NE	E	SE	S	SW	W	NW
0000-0100	7	13	NW		0	0	19	7	5	0	2	0	17	50
0100-0200	7	13	NW		0	0	19	5	10	0	0	0	7	60
0200-0300	7	13	NW	W	0	0	14	10	7	0	0	2	12	55
0300-0400	6	13	NW		0	0	14	10	7	0	0	2	10	57
0400-0500	5	13	NW		0	0	25	10	10	0	0	0	5	50
0500-0600	5	13	NW	N	0	0	20	15	10	0	0	0	7	47
0600-0700	5	13	N		0	0	26	12	5	2	0	2	10	43
0700-0800	4	13	NW		0	0	14	17	5	0	0	2	7	55
0800-0900	5	13	NW		0	0	19	14	0	0	0	2	17	48
0900-1000	5	13	NW		0	0	17	10	2	0	0	5	14	52
1000-1100	6	13	NW		0	0	19	7	0	0	0	5	21	48
1100-1200	7	13	NW		0	0	10	5	0	0	0	5	26	55
1200-1300	6	13	NW		0	0	5	9	0	0	0	7	28	51
1300-1400	7	13	NW	NE	0	0	7	11	0	0	0	5	20	57
1400-1500	6	13	NW		0	0	16	11	0	0	0	0	25	48
1500-1600	7	13	NW		0	0	19	5	0	0	0	0	30	47
1600-1700	7	13	NW		0	0	18	9	0	0	0	0	23	50
1700-1800	6	13	NW		0	0	10	13	0	0	0	0	26	52
1800-1900	8	13	NW		0	0	21	10	0	0	0	0	17	52
1900-2000	8	13	NW		0	0	12	17	0	0	0	0	21	50
2000-2100	7	13	NW		0	0	10	14	5	0	0	0	17	55
2100-2200	7	13	NW		0	0	17	5	10	0	0	0	14	55
2200-2300	7	13	NW	W	0	0	19	5	10	0	0	0	17	50
2300-2400	7	13	NW	W	0	0	17	5	10	0	0	0	14	55

SITE 1 TARGET RIDGE JULY,1966

TIME	WIND SPEED (KNOTS) AVG	MAX	MAX DIR	CALM	DIRECTION PERCENTAGE DISTRIBUTION VAR	N	NE	E	SE	S	SW	W	NW
0000-0200	7	13	NW	0	0	19	6	7	0	1	0	12	55
0200-0400	6	13	NW W	0	0	14	10	7	0	0	2	11	56
0400-0600	5	13	NW N	0	0	22	13	10	0	0	0	6	49
0600-0800	5	13	N NW	0	0	20	14	5	1	0	2	8	49
0800-1000	5	13	NW	0	0	18	12	1	0	0	4	15	50
1000-1200	6	13	NW	0	0	14	6	0	0	0	5	24	51
1200-1400	7	13	NW NE	0	0	6	10	0	0	0	6	24	54
1400-1600	7	13	NW	0	0	17	8	0	0	0	0	28	47
1600-1800	6	13	NW	0	0	15	11	0	0	0	0	24	51
1800-2000	8	13	NW	0	0	17	13	0	0	0	0	19	51
2000-2200	7	13	NW	0	0	13	10	7	0	0	0	15	55
2200-2400	7	13	NW W	0	0	18	5	10	0	0	0	15	52

SITE 1 TARGET RIDGE JULY,1966

TIME	WIND SPEED (KNOTS) AVG	MAX	MAX DIR	CALM	DIRECTION PERCENTAGE DISTRIBUTION VAR	N	NE	E	SE	S	SW	W	NW
0000-0300	7	13	NW W	0	0	17	7	7	0	1	1	12	55
0300-0600	6	13	NW N	0	0	20	11	9	0	0	1	7	52
0600-0900	5	13	N NW	0	0	20	14	3	1	0	2	11	48
0900-1200	6	13	NW	0	0	15	7	1	0	0	5	21	52
1200-1500	7	13	NW NE	0	0	9	11	0	0	0	4	24	52
1500-1800	6	13	NW	0	0	16	8	0	0	0	0	26	49
1800-2100	8	13	NW	0	0	15	13	1	0	0	0	18	52
2100-2400	7	13	NW W	0	0	17	5	10	0	0	0	15	53

SITE 1 TARGET RIDGE JULY, 1966

TIME	WIND SPEED (KNOTS) AVG	MAX	MAX DIR		DIRECTION PERCENTAGE DISTRIBUTION CALM	VAR	N	NE	E	SE	S	SW	W	NW
0000-0400	7	13	NW	W	0	0	17	8	7	0	1	1	11	55
0400-0800	5	13	NW	N	0	0	21	13	7	1	0	1	7	49
0800-1200	6	13	NW		0	0	16	9	1	0	0	4	20	51
1200-1600	7	13	NW	NE	0	0	11	9	0	0	0	3	26	51
1600-2000	7	13	NW		0	0	16	12	0	0	0	0	21	51
2000-2400	7	13	NW	W	0	0	15	7	8	0	0	0	15	54

SITE 1 TARGET RIDGE JULY, 1966

	WIND SPEED (KNOTS)				DIRECTION	PERCENTAGE		DISTRIBUTION					
TIME	AVG	MAX	MAX DIR	CALM	VAR	N	NE	E	SE	S	SW	W	NW
0000-0600	6	13	NW W V	0	0	19	9	8	0	0	1	10	53
0600-1200	5	13	N NW	0	0	17	11	2	0	0	4	16	50
1200-1800	6	13	NW NE	0	0	12	10	0	0	0	2	25	51
1800-2400	7	13	NW W	0	0	16	9	5	0	0	0	17	53

SITE 20 PAD D, SURFACE JULY, 1966

TIME	WIND SPEED (KNOTS) AVG	MAX	MAX DIR	CALM	DIRECTION PERCENTAGE DISTRIBUTION VAR	N	NE	E	SE	S	SW	W	NW
0000-0030	6	8	N NE	0	0	75	13	13	0	0	0	0	0
0030-0100	6	8	N NE	0	0	75	13	13	C	0	0	0	0
0100-0130	6	8	N NE	0	0	75	13	13	0	0	0	0	0
0130-0200	6	8	N	0	0	88	13	0	0	0	0	0	0
0200-0230	6	8	NW N	0	0	63	13	0	0	0	0	0	25
0230-0300	6	8	N NW	0	0	75	0	13	0	0	0	0	13
0300-0330	6	8	N NW	0	0	63	13	13	0	0	0	0	13
0330-0400	6	8	N NW	0	0	63	25	0	0	0	0	0	13
0400-0430	6	8	N	0	0	88	13	0	0	0	0	0	0
0430-0500	5	8	N	0	0	88	13	0	0	0	0	0	0
0500-0530	5	8	N	0	0	88	13	0	0	0	0	0	0
0530-0600	5	8	N	0	0	75	25	0	0	0	0	0	0
0600-0630	5	8	N	0	0	88	13	0	0	0	0	0	0
0630-0700	5	8	N	0	0	75	13	0	0	0	0	0	13
0700-0730	5	8	N	0	0	88	0	0	0	0	0	0	13
0730-0800	5	8	N	0	0	63	0	0	0	0	0	0	38
0800-0830	5	8	N NW	0	0	50	0	0	0	0	0	0	50
0830-0900	5	8	N NW	0	0	38	0	0	0	0	0	13	50
0900-0930	5	8	NW N	0	0	25	0	0	0	0	0	25	50
0930-1000	6	8	NW N	0	0	25	0	0	0	0	13	13	50
1000-1030	6	8	NW N	0	0	25	0	0	0	0	13	13	50
1030-1100	6	8	NW N	0	0	13	0	0	0	0	13	13	63
1100-1130	6	8	NW N	0	0	13	0	0	0	0	13	13	63
1130-1200	6	8	NW N	0	0	25	0	0	0	0	13	13	50
1200-1230	6	8	NW N	0	0	25	0	0	0	0	13	13	50
1230-1300	6	8	NW N	0	0	38	0	0	0	0	13	13	38
1300-1330	6	8	NW N	0	0	38	0	0	0	0	13	13	38

SITE 20 PAD D, SURFACE JULY,1966

TIME	WIND SPEED (KNOTS) AVG	MAX	MAX DIR	CALM	DIRECTION VAR	PERCENTAGE N	NE	E	SE	DISTRIBUTION S	SW	W	NW
1330-1400	6	8	NW N	0	0	38	0	0	0	0	13	0	50
1400-1430	6	8	NW N	0	0	38	0	0	0	0	0	0	63
1430-1500	5	8	NW N	0	0	43	0	0	0	0	0	0	57
1500-1530	5	8	NW N	0	0	57	0	0	0	0	0	0	43
1530-1600	6	8	NW N	0	0	71	0	0	0	0	0	0	29
1600-1630	6	8	NW N	0	0	71	0	0	0	0	0	0	29
1630-1700	7	8	NW N	0	0	71	0	0	0	0	0	0	29
1700-1730	7	8	NW N	0	0	86	0	0	0	0	0	0	14
1730-1800	7	8	NW N	0	0	86	0	0	0	0	0	0	14
1800-1830	8	8	N	0	0	100	0	0	0		0	0	0
1830-1900	8	8	N	0	0	100	0	0	0	0	0	0	0
1900-1930	6	8	N	0	0	86	14	0	0	0	0	0	0
1930-2000	6	8	N	0	0	86	14	0	0	0	0	0	0
2000-2030	6	8	N	0	0	71	29	0	0	0	0	0	0
2030-2100	6	8	N	0	0	71	29	0	0	0	0	0	0
2100-2130	7	8	N	0	0	86	14	0	0	0	0	0	0
2130-2200	7	8	N NE	0	0	71	29	0	0	0	0	0	0
2200-2230	7	8	N NE	0	0	71	29	0	0	0	0	0	0
2230-2300	7	8	N	0	0	85	14	0	0	0	0	0	0
2300-2330	7	8	N	0	0	86	0	0	14	0	0	0	0
2330-2400	7	8	N	0	0	86	0	14	0	0	0	0	0

SITE 20 PAD D, SURFACE JULY, 1966

TIME	WIND SPEED (KNOTS) AVG	MAX	MAX DIR		DIRECTION PERCENTAGE DISTRIBUTION CALM	VAR	N	NE	E	SE	S	SW	W	NW
0000-0100	6	8	N	NE	0	0	75	13	13	0	0	0	0	0
0100-0200	6	8	N	NE	0	0	81	13	6	0	0	0	0	0
0200-0300	6	8	NW	N	0	0	69	6	6	0	0	0	0	19
0300-0400	6	8	N	NW	0	0	63	19	6	0	0	0	0	13
0400-0500	5	8	N		0	0	88	13	0	0	0	0	0	0
0500-0600	5	8	N		0	0	81	19	0	0	0	0	0	0
0600-0700	5	8	N		0	0	81	13	0	0	0	0	0	6
0700-0800	5	8	N		0	0	75	0	0	0	0	0	0	25
0800-0900	5	8	N	NW	0	0	44	0	0	0	0	0	6	50
0900-1000	5	8	NW	N	0	0	25	0	0	0	0	6	19	50
1000-1100	6	8	NW	N	0	0	19	0	0	0	0	13	13	56
1100-1200	6	8	NW	N	0	0	19	0	0	0	0	13	13	56
1200-1300	6	8	NW	N	0	0	31	0	0	0	0	13	13	44
1300-1400	6	8	NW	N	0	0	38	0	0	0	0	13	6	44
1400-1500	6	8	NW	N	0	0	40	0	0	0	0	0	0	60
1500-1600	6	8	NW	N	0	0	64	0	0	0	0	0	0	36
1600-1700	6	8	NW	N	0	0	71	0	0	0	0	0	0	29
1700-1800	7	8	NW	N	0	0	86	0	0	0	0	0	0	14
1800-1900	8	8	N		0	0	100	0	0	0	0	0	0	0
1900-2000	6	8	N		0	0	86	14	0	0	0	0	0	0
2000-2100	6	8	N		0	0	71	29	0	0	0	0	0	0
2100-2200	7	8	N	NE	0	0	79	21	0	0	0	0	0	0
2200-2300	7	8	N	NE	0	0	79	21	0	0	0	0	0	0
2300-2400	7	8	N		0	0	86	0	7	7	0	0	0	0

SITE 20 PAD D, SURFACE JULY, 1966

TIME	WIND SPEED (KNOTS) AVG	MAX	MAX DIR	CALM	DIRECTION PERCENTAGE DISTRIBUTION VAR	N	NE	E	SE	S	SW	W	NW
0000-0200	6	8	N NE	0	0	78	13	9	0	0	0	0	0
0200-0400	6	8	NW N	0	0	66	13	6	0	0	0	0	16
0400-0600	5	8	N	0	0	84	16	0	0	0	0	0	0
0600-0800	5	8	N	0	0	78	6	0	0	0	0	0	16
0800-1000	5	8	N NW	0	0	34	0	0	0	0	3	13	50
1000-1200	6	8	NW N	0	0	19	0	0	0	0	13	13	56
1200-1400	6	8	NW N	0	0	34	0	0	0	0	13	9	44
1400-1600	6	8	NW N	0	0	52	0	0	0	0	0	0	48
1600-1800	6	8	NW N	0	0	79	0	0	0	0	0	0	21
1800-2000	7	8	N	0	0	93	7	0	0	0	0	0	0
2000-2200	6	8	N NE	0	0	75	25	0	0	0	0	0	0
2200-2400	7	8	N NE	0	0	82	11	4	4	0	0	0	0

SITE 20 PAD D, SURFACE JULY, 1966

TIME	WIND SPEED (KNOTS) AVG	MAX	MAX DIR	CALM	DIRECTION PERCENTAGE DISTRIBUTION VAR	N	NE	E	SE	S	SW	W	NW
0000-0300	6	8	N NE NW	0	0	75	10	8	0	0	0	0	6
0300-0600	6	8	N NW	0	0	77	17	2	0	0	0	0	4
0600-0900	5	8	N NW	0	0	67	4	0	0	0	0	2	27
0900-1200	6	8	NW N	0	0	21	0	0	0	0	10	15	54
1200-1500	6	8	NW N	0	0	36	0	0	0	0	9	6	49
1500-1800	6	8	NW N	0	0	74	0	0	0	0	0	0	26
1800-2100	7	8	N	0	0	86	14	0	0	0	0	0	0
2100-2400	7	8	N NE	0	0	81	14	2	2	0	0	0	0

SITE 20 PAD D, SURFACE JULY,1966

TIME	WIND SPEED (KNOTS) AVG	MAX	MAX DIR	CALM	VAR	N	NE	E	SE	S	SW	W	NW
0000-0400	6	8	V NE NW	0	0	72	13	8	0	0	0	0	8
0400-0800	5	8	V	0	0	81	11	0	0	0	0	0	8
0800-1200	5	8	V NW	0	0	27	0	0	0	0	8	13	53
1200-1600	6	8	NW N	0	0	43	0	0	0	0	7	5	46
1600-2000	7	8	NW N	0	0	86	4	0	0	0	0	0	11
2000-2400	7	8	V NE	0	0	79	18	2	2	0	0	0	0

DIRECTION PERCENTAGE DISTRIBUTION (columns VAR through NW)

SITE 20 PAD D, SURFACE JULY,1966

TIME	WIND SPEED (KNOTS) AVG	MAX	MAX DIR	CALM	DIRECTION PERCENTAGE DISTRIBUTION VAR	N	NE	E	SE	S	SW	W	NW
0000-0600	6	8	N NE NW	0	0	76	14	5	0	0	0	0	5
0600-1200	5	8	N NW	0	0	44	2	0	0	0	5	8	41
1200-1800	6	8	NW N	0	0	54	0	0	0	0	4	3	38
1800-2400	7	8	N NE	0	0	83	14	1	1	0	0	0	0

SITE 40 VHF JULY,1966

TIME	WIND SPEED (KNOTS) AVG	MAX	MAX DIR	CALM	DIRECTION PERCENTAGE DISTRIBUTION VAR	N	NE	E	SE	S	SW	W	NW
0000-0030	6	14	NW	0	0	16	4	4	4	0	20	12	40
0030-0100	6	14	NW	0	0	36	0	0	8	0	16	16	24
0100-0130	6	9	N NW W	0	0	24	4	0	8	0	8	24	32
0130-0200	6	14	NW	0	0	28	0	0	8	0	16	4	44
0200-0230	7	14	NW	0	0	28	4	0	8	4	8	12	36
0230-0300	7	14	NW	0	0	20	12	0	4	0	16	12	36
0300-0330	6	14	NW	0	0	36	4	0	4	4	12	8	32
0330-0400	5	14	NW	0	0	36	4	0	12	0	8	12	28
0400-0430	5	14	NW	0	0	44	0	0	8	4	16	8	20
0430-0500	5	14	NW	0	0	32	0	4	8	0	8	20	28
0500-0530	5	9	N NW W SE	0	0	24	0	0	8	0	16	24	28
0530-0600	6	9	NW N NE W SE	0	0	20	4	0	4	4	12	20	36
0600-0630	6	9	N NW NE W SE	0	0	20	16	0	8	0	4	20	32
0630-0700	6	14	W	0	0	32	12	8	4	0	0	8	36
0700-0730	6	9	NW N W	0	0	32	16	4	0	0	0	8	40
0730-0800	6	14	NW	0	0	40	4	0	0	0	0	8	48
0800-0830	7	14	N NW	0	0	16	4	0	0	4	0	12	64
0830-0900	9	14	NW	0	0	21	0	4	0	0	0	8	67
0900-0930	9	20	NW	0	0	13	0	0	0	0	4	17	67
0930-1000	11	14	NW W N	0	0	8	0	0	0	0	0	17	75
1000-1030	12	20	N	0	0	13	0	0	0	0	0	17	71
1030-1100	13	20	NW	0	0	13	0	0	0	0	0	17	70
1100-1130	13	20	NW	0	0	4	0	0	0	0	0	17	78
1130-1200	14	20	NW W	0	0	4	0	0	0	0	0	17	78

SITE 40 VHF JULY,1966

TIME	WIND SPEED (KNOTS) AVG	MAX	MAX DIR	CALM	DIRECTION PERCENTAGE DISTRIBUTION VAR	N	NE	E	SE	S	SW	W	NW
1200-1230	15	20	W NW	0	0	0	0	0	0	0	0	19	81
1230-1300	15	20	NW	0	0	0	0	0	0	0	0	14	86
1300-1330	15	20	NW	0	0	0	0	0	0	0	0	9	91
1330-1400	15	20	NW	0	0	0	0	0	0	0	0	0	100
1400-1430	14	20	NW	0	0	4	0	0	0	0	0	4	91
1430-1500	15	20	NW N	0	0	4	0	0	0	0	0	8	88
1500-1530	15	20	NW	0	0	0	0	0	0	0	0	13	88
1530-1600	13	20	NW	0	0	0	0	0	0	0	0	0	100
1600-1630	13	20	NW	0	0	0	0	0	0	0	0	8	92
1630-1700	12	14	NW	0	0	0	0	0	0	0	0	4	96
1700-1730	11	14	NW W	0	0	0	0	0	0	0	0	17	83
1730-1800	10	14	NW	0	0	0	0	0	0	0	0	12	88
1800-1830	12	14	NW	0	0	3	0	0	0	0	0	13	83
1830-1900	9	14	NW	0	0	4	0	0	0	0	0	22	74
1900-1930	7	9	N W NW	0	0	9	0	0	0	0	0	48	43
1930-2000	6	9	N W NW	0	0	13	0	0	0	0	4	39	43
2000-2030	6	9	N W NW	0	0	26	0	0	0	0	13	35	26
2030-2100	5	9	NW N W	0	0	30	0	0	0	0	17	30	22
2100-2130	5	9	N W NW	0	0	22	4	0	0	0	17	22	35
2130-2200	5	9	N NW W	0	0	35	4	0	0	0	22	13	26
2200-2230	5	9	N NW	0	4	22	4	0	0	0	17	13	39
2230-2300	6	9	N NW W	0	4	22	0	0	0	4	22	22	26
2300-2330	6	9	NW N W	0	0	26	0	0	0	0	26	17	39
2330-2400	6	9	NW C N W	4	0	30	4	0	0	0	13	26	22

SITE 40 VHF JULY, 1966

TIME	WIND SPEED (KNOTS) AVG	MAX	MAX DIR	CALM	DIRECTION PERCENTAGE DISTRIBUTION VAR	N	NE	E	SE	S	SW	W	NW
0000-0100	6	14	NW	0	0	26	2	2	6	0	18	14	32
0100-0200	6	14	NW	0	0	26	2	0	8	0	12	14	38
0200-0300	7	14	NW	0	0	24	8	0	6	2	12	12	36
0300-0400	6	14	NW	0	0	36	4	0	8	2	10	10	30
0400-0500	5	14	NW	0	0	38	0	2	8	2	12	14	24
0500-0600	5	9	N NW W	0	0	22	2	0	6	2	14	22	32
0600-0700	6	14	SE NE W	0	0	26	14	4	6	0	2	14	34
0700-0800	6	14	NW	0	0	36	10	2	0	0	0	8	44
0800-0900	8	14	N NW	0	0	18	2	2	0	2	0	10	65
0900-1000	10	20	NW	0	0	10	0	0	0	0	2	17	71
1000-1100	13	20	N NW	0	0	13	0	0	0	0	0	17	70
1100-1200	14	20	NW W	0	0	4	0	0	0	0	0	17	78
1200-1300	15	20	W NW	0	0	0	0	0	0	0	0	16	84
1300-1400	15	20	NW	0	0	0	0	0	0	0	0	5	95
1400-1500	15	20	NW N	0	0	4	0	0	0	0	0	6	89
1500-1600	14	20	NW	0	0	0	0	0	0	0	0	6	94
1600-1700	13	20	NW	0	0	0	0	0	0	0	0	6	94
1700-1800	11	14	NW W	0	0	0	0	0	0	0	0	15	85
1800-1900	11	14	NW	0	0	4	0	0	0	0	0	17	79
1900-2000	7	9	N W NW	0	0	11	0	0	0	0	2	43	43
2000-2100	6	9	N W NW	0	0	28	0	0	0	0	15	33	24
2100-2200	5	9	N W NW	0	0	28	4	0	0	0	20	17	30
2200-2300	5	9	N NW W	0	4	22	2	0	0	2	20	17	33
2300-2400	6	9	NW N W	2	0	28	2	0	0	0	20	22	26

SITE 40 VHF JULY,1966

TIME	WIND SPEED (KNOTS) AVG	MAX	MAX DIR	CALM	DIRECTION PERCENTAGE DISTRIBUTION VAR	N	NE	E	SE	S	SW	W	NW
0000-0200	6	14	NW	0	0	26	2	1	7	0	15	14	35
0200-0400	6	14	NW	0	0	30	6	0	7	2	11	11	33
0400-0600	5	14	NW	0	0	30	1	1	7	2	13	18	28
0600-0800	6	14	W NW	0	0	31	12	3	3	0	1	11	39
0800-1000	9	20	NW	0	0	14	1	1	0	1	1	13	68
1000-1200	13	20	N NW W	0	0	9	0	0	0	0	0	17	74
1200-1400	15	20	W NW	0	0	0	0	0	0	0	0	10	90
1400-1600	14	20	NW N	0	0	2	0	0	0	0	0	6	92
1600-1800	12	20	NW	0	0	0	0	0	0	0	0	10	90
1800-2000	9	14	NW	0	0	7	0	0	0	0	1	29	63
2000-2200	6	9	N W NW	0	0	28	2	0	0	0	17	25	27
2200-2400	6	9	N NW W	1	2	25	2	0	0	1	20	20	29

C

SITE 40 VHF JULY, 1966

TIME	WIND SPEED (KNOTS) AVG	MAX	MAX DIR	CALM	DIRECTION VAR	N	NE	E	SE	PERCENTAGE S	DISTRIBUTION SW	W	NW
0000-0300	6	14	NW	0	0	25	4	1	7	1	14	13	35
0300-0600	5	14	NW	0	0	32	2	1	7	2	12	15	29
0600-0900	6	14	W NW N	0	0	27	9	3	2	1	1	11	48
0900-1200	12	20	NW N W	0	0	9	0	0	0	0	1	17	73
1200-1500	15	20	W NW N	0	0	1	0	0	0	0	0	9	90
1500-1800	13	20	NW	0	0	0	0	0	0	0	0	9	91
1800-2100	8	14	NW	0	0	14	0	0	0	0	6	30	50
2100-2400	6	9	V W NW C	1	1	26	3	0	0	1	20	19	30

SITE 40 VHF JULY,1966

TIME	WIND SPEED (KNOTS) AVG	MAX	MAX DIR	CALM	DIRECTION PERCENTAGE DISTRIBUTION VAR	N	NE	E	SE	S	SW	W	NW
0000-0400	6	14	NW	0	0	28	4	0	7	1	13	13	34
0400-0800	6	14	NW W	0	0	30	6	2	5	1	7	14	33
0800-1200	11	20	NW N W	0	0	12	1	1	0	1	1	15	71
1200-1600	15	20	W NW N	0	0	1	0	0	0	0	0	8	91
1600-2000	10	20	NW	0	0	4	0	0	0	0	1	20	76
2000-2400	6	9	N W NW C	1	1	27	2	0	0	1	18	22	28

SITE 40 VHF JULY, 1966

TIME	WIND SPEED (KNOTS) AVG	MAX	MAX DIR	CALM	DIRECTION PERCENTAGE DISTRIBUTION VAR	N	NE	E	SE	S	SW	W	NW
0000-0600	6	14	NW	0	0	29	3	1	7	1	13	14	32
0600-1200	9	20	NW N W	0	0	18	4	1	1	0	1	14	60
1200-1800	14	20	W NW N	0	0	1	0	0	0	0	0	9	90
1800-2400	7	14	NW	0	1	20	1	0	0	0	12	25	40

SITE 43 PAD A, SURFACE JULY, 1966

TIME	WIND SPEED (KNOTS) AVG	MAX	MAX DIR	CALM	DIRECTION PERCENTAGE DISTRIBUTION VAR	N	NE	E	SE	S	SW	W	NW
0000-0030	5	8	NW SE N	0	5	15	0	15	5	0	5	0	55
0030-0100	5	8	E/NW E N	0	0	25	5	10	0	5	0	10	45
0100-0130	5	8	NW E N	0	0	25	5	10	0	0	5	10	45
0130-0200	6	8	NW SE N	0	0	25	0	5	10	0	0	5	55
0200-0230	6	8	NW SE N	0	0	20	0	5	10	0	0	5	60
0230-0300	6	8	W/NW E N	0	0	25	0	15	0	0	0	0	60
0300-0330	6	8	NW E N	0	0	25	0	15	0	0	0	5	55
0330-0400	5	8	W/NW E N	0	0	35	0	10	5	0	0	5	45
0400-0430	5	8	W/NW E N	0	0	30	0	15	0	0	0	0	55
0430-0500	5	8	SE N E	0	0	20	0	10	5	0	0	0	65
0500-0530	5	8	NW/NW N E	0	0	10	10	5	0	5	0	10	60
0530-0600	5	8	N W NW	0	5	25	0	10	0	0	0	15	45
0600-0630	5	8	NW N W	0	0	20	0	15	0	0	0	5	60
0630-0700	5	8	N NW W	0	0	15	10	0	0	0	5	5	65
0700-0730	5	8	NW N W	0	0	10	5	0	0	0	0	15	70
0730-0800	6	8	W NW N	0	0	5	0	0	0	0	0	10	85
0800-0830	6	8	W NW	0	0	5	0	0	0	0	0	15	80
0830-0900	6	8	W NW N	0	0	5	0	0	0	0	0	40	55
0900-0930	6	8	W NW	0	0	5	0	0	0	0	0	35	60
0930-1000	7	8	NW W	0	0	0	0	0	0	0	0	30	70
1000-1030	7	8	NW W	0	0	0	0	0	0	0	0	43	57
1030-1100	8	8	NW W	0	0	0	0	0	0	0	0	43	57

SITE 43 PAD A. SURFACE JULY,1966

TIME	WIND SPEED (KNOTS) AVG	MAX	MAX DIR	CALM	DIRECTION PERCENTAGE DISTRIBUTION VAR	N	NE	E	SE	S	SW	W	NW
1100-1130	8	13	NW	0	0	0	0	0	0	0	0	50	50
1130-1200	8	13	NW	0	0	0	0	0	0	0	0	55	45
1200-1230	7	9	W	0	0	0	0	0	0	0	0	48	52
1230-1300	7	9	W	0	0	0	0	0	0	0	0	43	57
1300-1330	7	9	W	0	0	0	0	0	0	0	0	33	67
1330-1400	8	9	W	0	0	0	0	0	0	0	0	43	57
1400-1430	7	13	NW	0	0	0	0	0	0	0	0	33	67
1430-1500	7	13	W	0	0	0	0	0	0	0	0	38	62
1500-1530	7	13	W	0	0	0	0	0	0	0	0	38	62
1530-1600	7	13	W	0	0	5	0	0	0	0	0	33	62
1600-1630	7	9	NW	0	0	0	0	0	0	0	0	14	86
1630-1700	6	8	NW W	0	0	0	0	0	0	0	0	25	75
1700-1730	6	8	NW W	0	0	0	0	0	0	0	0	25	75
1730-1800	7	8	NW W	0	0	0	0	0	0	0	0	18	82
1800-1830	8	13	NW	0	0	0	0	0	0	0	0	24	76
1830-1900	5	8	NW W V	0	0	5	0	0	0	0	0	26	68
1900-1930	4	8	NW N W	0	0	11	0	0	0	0	0	42	47
1930-2000	4	8	NW N W	0	0	5	5	0	0	0	16	26	47
2000-2030	4	8	NW N W	0	0	16	5	0	5	0	11	32	32
2030-2100	4	8	NW N W	0	0	16	5	0	5	0	16	21	37
2100-2130	4	8	NW N W	0	0	16	5	5	5	0	11	21	37
2130-2200	4	8	NW N	0	0	11	11	5	5	0	0	21	47
2200-2230	3	8	NW	0	0	5	11	5	5	5	0	16	53
2230-2300	4	8	NW	0	5	5	11	11	5	0	0	5	58
2300-2330	4	8	NW SE	0	0	0	11	11	5	5	0	11	58
2330-2400	5	8	NW SE V	0	5	5	5	16	5	0	0	11	53

SITE 43 PAD A, SURFACE JULY,1966

TIME	WIND SPEED (KNOTS) AVG	MAX	MAX DIR	CALM	DIRECTION PERCENTAGE DISTRIBUTION VAR	N	NE	E	SE	S	SW	W	NW
0000-0100	5	8	NW SE V E	0	2	20	2	13	2	2	2	5	50
0100-0200	6	8	NW E V SE	0	0	25	2	7	5	0	2	7	50
0200-0300	6	8	NW SE V W E	0	0	22	0	10	5	0	0	2	60
0300-0400	6	8	NW E V W	0	0	30	0	13	2	0	0	5	50
0400-0500	5	8	NW E V SE	0	0	25	0	13	2	0	0	0	60
0500-0600	5	8	NW N E W	0	2	17	5	7	0	2	0	13	52
0600-0700	5	8	NW N W	0	0	17	5	7	0	0	2	5	63
0700-0800	5	8	NW N W	0	0	7	2	0	0	0	0	13	77
0800-0900	6	8	W NW V	0	0	5	0	0	0	0	0	27	67
0900-1000	6	8	W NW	0	0	2	0	0	0	0	0	32	65
1000-1100	7	8	NW W	0	0	0	0	0	0	0	0	43	57
1100-1200	8	13	NW	0	0	0	0	0	0	0	0	52	47
1200-1300	7	9	W	0	0	0	0	0	0	0	0	45	55
1300-1400	7	9	W	0	0	0	0	0	0	0	0	38	62
1400-1500	7	13	NW W	0	0	0	0	0	0	0	0	36	64
1500-1600	7	13	W	0	0	2	0	0	0	0	0	36	62
1600-1700	7	9	NW	0	0	0	0	0	0	0	0	20	80
1700-1800	7	8	NW W	0	0	0	0	0	0	0	0	23	77
1800-1900	7	13	NW	0	0	2	0	0	0	0	0	25	73
1900-2000	4	8	NW N W	0	0	8	3	0	0	0	8	34	47
2000-2100	4	8	NW N W	0	0	16	5	0	5	0	13	26	34

SITE 43 PAD A, SURFACE JULY,1966

TIME	WIND SPEED (KNOTS) AVG	MAX	MAX DIR	CALM	DIRECTION PERCENTAGE DISTRIBUTION VAR	N	NE	E	SE	S	SW	W	NW
2100-2200	4	8	NW N W	0	0	13	8	5	5	0	5	21	42
2200-2300	4	8	NW	0	3	5	11	9	5	3	0	11	55
2300-2400	4	8	NW SE V	0	3	3	8	13	5	3	0	11	55

SITE 43 PAD A, SURFACE JULY,1966

TIME	WIND SPEED (KNOTS) AVG	MAX	MAX DIR	CALM	DIRECTION PERCENTAGE DISTRIBUTION VAR	N	NE	E	SE	S	SW	W	NW
0000-0200	5	8	NW SE N E	0	1	22	2	10	4	1	2	6	50
0200-0400	6	8	NW SE N W E	0	0	26	0	11	4	0	0	4	55
0400-0600	5	8	NW E N SE W	0	1	21	2	10	1	1	0	6	56
0600-0800	5	8	NW N W	0	0	13	4	4	0	0	1	9	70
0800-1000	6	8	W NW N	0	0	4	0	0	0	0	0	30	66
1000-1200	8	13	NW	0	0	0	0	0	0	0	0	48	52
1200-1400	7	9	W	0	0	0	0	0	0	0	0	42	58
1400-1600	7	13	NW W	0	0	1	0	0	0	0	0	36	63
1600-1800	7	9	NW	0	0	0	0	0	0	0	0	21	79
1800-2000	5	13	NW	0	0	5	1	0	0	0	3	29	62
2000-2200	4	8	NW N W	0	0	14	7	3	5	0	9	24	38
2200-2400	4	8	NW SE N	0	3	4	9	11	5	3	0	11	55

SITE 43 PAD A, SURFACE JULY, 1966

TIME	WIND SPEED (KNOTS) AVG	MAX	MAX DIR	CALM	DIRECTION PERCENTAGE DISTRIBUTION VAR	N	NE	E	SE	S	SW	W	NW
0000-0300	6	8	NW SE V E W	0	1	22	2	10	4	1	2	5	53
0300-0600	5	8	NW E V W SE	0	1	24	2	11	2	1	0	6	54
0600-0900	5	8	NW N W	0	0	10	2	2	0	0	1	15	69
0900-1200	7	13	NW	0	0	1	0	0	0	0	0	43	57
1200-1500	7	13	NW W	0	0	0	0	0	0	0	0	40	60
1500-1800	7	13	W	0	0	1	0	0	0	0	0	26	73
1800-2100	5	13	NW	0	0	8	2	0	2	0	6	28	53
2100-2400	4	8	NW N W SE	0	2	7	9	9	5	2	2	14	51

SITE 43 PAD A, SURFACE JULY,1966

TIME	WIND SPEED (KNOTS) AVG	MAX	MAX DIR	CALM	DIRECTION PERCENTAGE DISTRIBUTION VAR	N	NE	E	SE	S	SW	W	NW
0000-0400	6	8	NW SE V E W	0	1	24	1	11	4	1	1	5	52
0400-0800	5	8	NW E V SE W	0	1	17	3	7	1	1	1	7	63
0800-1200	7	13	NW	0	0	2	0	0	0	0	0	39	59
1200-1600	7	13	NW W	0	0	1	0	0	0	0	0	39	61
1600-2000	6	13	NW	0	0	3	1	0	0	0	2	25	70
2000-2400	4	8	NW N W SE	0	1	9	8	7	5	1	5	17	47

SITE 43 PAD A, SURFACE JULY, 1966

TIME	WIND SPEED (KNOTS) AVG	MAX	MAX DIR	CALM	DIRECTION VAR	N	NE	PERCENTAGE E	SE	DISTRIBUTION S	SW	W	NW
0000-0600	5	8	NW SE V E W	0	1	23	2	10	3	1	1	5	54
0600-1200	6	13	NW	0	0	5	1	1	0	0	0	29	63
1200-1800	7	13	NW W	0	0	0	0	0	0	0	0	33	66
1800-2400	4	13	NW	0	1	8	5	4	3	1	4	21	52

SITE 55 REMOTE RADAR, SURFACE JULY,1966

TIME	WIND SPEED (KNOTS) AVG	MAX	MAX DIR	CALM	DIRECTION PERCENTAGE DISTRIBUTION VAR	N	NE	E	SE	S	SW	W	NW
0000-0030	12	18	N NE	0	0	89	11	0	0	0	0	0	0
0030-0100	12	23	N	0	0	89	11	0	0	0	0	0	0
0100-0130	11	23	N	0	0	89	11	0	0	0	0	0	0
0130-0200	12	23	N	0	0	67	33	0	0	0	0	0	0
0200-0230	13	23	N	0	0	72	28	0	0	0	0	0	0
0230-0300	13	23	N	0	0	78	22	0	0	0	0	0	0
0300-0330	13	23	N	0	0	83	17	0	0	0	0	0	0
0330-0400	14	23	N	0	0	67	33	0	0	0	0	0	0
0400-0430	11	18	N	0	0	67	33	0	0	0	0	0	0
0430-0500	11	18	N	0	0	67	33	0	0	0	0	0	0
0500-0530	11	23	N	0	0	67	28	6	0	0	0	0	0
0530-0600	11	28	N	0	0	67	28	0	0	6	0	0	0
0600-0630	11	28	N	0	0	67	28	0	0	0	0	0	6
0630-0700	11	23	N	0	0	67	28	0	0	0	0	0	6
0700-0730	10	23	N	0	0	78	22	0	0	0	0	0	0
0730-0800	10	23	N	0	0	72	28	0	0	0	0	0	0
0800-0830	10	23	N	0	0	78	22	0	0	0	0	0	0
0830-0900	10	23	N	0	0	83	17	0	0	0	0	0	0
0900-0930	10	23	NE	0	0	78	17	0	0	0	0	0	6
0930-1000	9	18	N NE	0	0	78	11	6	0	0	0	0	6
1000-1030	9	23	N	0	0	76	12	0	6	0	0	0	6
1030-1100	10	23	N	0	0	71	12	0	12	0	0	0	6
1100-1130	9	23	N	0	0	76	6	0	12	0	0	0	6
1130-1200	11	23	N	0	0	76	6	6	6	6	0	0	0
1200-1230	11	23	N	0	0	76	6	0	12	6	0	0	0
1230-1300	11	23	N	0	0	88	0	0	6	6	0	0	0
1300-1330	11	28	N	0	0	88	0	0	6	6	0	0	0

SITE 55 REMOTE RADAR, SURFACE JULY,1966

TIME	WIND SPEED (KNOTS) AVG	MAX	MAX DIR	CALM	DIRECTION VAR	N	PERCENTAGE NE	E	SE	DISTRIBUTION S	SW	W	NW
1330-1400	11	28	N	0	0	88	0	0	6	6	0	0	0
1400-1430	11	26	N	0	0	88	0	0	0	6	0	6	0
1430-1500	12	28	N	0	0	94	0	0	0	6	0	0	0
1500-1530	11	28	N	0	0	94	0	0	0	6	0	0	0
1530-1600	12	28	N	0	0	94	0	0	0	6	0	0	0
1600-1630	12	28	N	0	0	94	0	0	0	6	0	0	0
1630-1700	12	28	N	0	0	94	0	0	0	6	0	0	0
1700-1730	11	28	N	0	0	94	0	0	0	6	0	0	0
1730-1800	10	18	N	0	0	94	0	0	0	6	0	0	0
1800-1830	11	18	N	0	0	94	0	0	0	0	6	0	0
1830-1900	11	18	N	0	0	94	0	0	0	0	0	0	6
1900-1930	11	23	N	0	0	100	0	0	0	0	0	0	0
1930-2000	11	23	N	0	0	94	6	0	0	0	0	0	0
2000-2030	11	23	N	0	0	88	12	0	0	0	0	0	0
2030-2100	11	18	N	0	0	94	6	0	0	0	0	0	0
2100-2130	11	18	N NE	0	0	94	6	0	0	0	0	0	0
2130-2200	12	18	N NE	0	0	88	12	0	0	0	0	0	0
2200-2230	12	18	N	0	0	88	12	0	0	0	0	0	0
2230-2300	11	23	N	0	0	88	12	0	0	0	0	0	0
2300-2330	11	23	N	0	0	94	6	0	0	0	0	0	0
2330-2400	11	23	N	0	0	94	6	0	0	0	0	0	0

SITE 55 REMOTE RADAR, SURFACE JULY,1966

TIME	WIND SPEED (KNOTS) AVG	MAX	MAX DIR	CALM	DIRECTION PERCENTAGE DISTRIBUTION VAR	N	NE	E	SE	S	SW	W	NW
0000-0100	12	23	N	0	0	89	11	0	0	0	0	0	0
0100-0200	12	23	N	0	0	78	22	0	0	0	0	0	0
0200-0300	13	23	N	0	0	75	25	0	0	0	0	0	0
0300-0400	13	23	N	0	0	75	25	0	0	0	0	0	0
0400-0500	11	18	N	0	0	67	33	0	0	0	0	0	0
0500-0600	11	28	N	0	0	67	28	3	0	3	0	0	0
0600-0700	11	28	N	0	0	67	28	0	0	0	0	0	5
0700-0800	10	23	N	0	0	75	25	0	0	0	0	0	0
0800-0900	10	23	N	0	0	81	19	0	0	0	0	0	0
0900-1000	10	23	NE	0	0	78	14	3	0	0	0	0	6
1000-1100	9	23	N	0	0	74	12	0	9	0	0	0	6
1100-1200	10	23	N	0	0	76	6	3	9	3	0	0	3
1200-1300	11	23	N	0	0	82	3	0	9	6	0	0	0
1300-1400	11	28	N	0	0	88	0	0	6	6	0	0	0
1400-1500	11	28	N	0	0	91	0	0	0	6	0	3	0
1500-1600	11	28	N	0	0	94	0	0	0	6	0	0	0
1600-1700	12	28	N	0	0	94	0	0	0	6	0	0	0
1700-1800	11	28	N	0	0	94	0	0	0	6	0	0	0
1800-1900	11	18	N	0	0	94	0	0	0	0	3	0	3
1900-2000	11	23	N	0	0	97	3	0	0	0	0	0	0
2000-2100	11	23	N	0	0	91	9	0	0	0	0	0	0
2100-2200	11	18	N NE	0	0	91	9	0	0	0	0	0	0
2200-2300	11	23	N	0	0	88	12	0	0	0	0	0	0
2300-2400	11	23	N	0	0	94	6	0	0	0	0	0	0

SITE 55 REMOTE RADAR, SURFACE JULY,1966

TIME	WIND SPEED (KNOTS) AVG	MAX	MAX DIR	CALM	DIRECTION PERCENTAGE DISTRIBUTION VAR	N	NE	E	SE	S	SW	W	NW
0000-0200	12	23	N	0	0	83	17	0	0	0	0	0	0
0200-0400	13	23	N	0	0	75	25	0	0	0	0	0	0
0400-0600	11	28	N	0	0	67	31	1	0	1	0	0	0
0600-0800	10	28	N	0	0	71	26	0	0	0	0	0	3
0800-1000	10	23	N NE	0	0	79	17	1	0	0	0	0	3
1000-1200	10	23	N	0	0	75	9	1	9	1	0	0	4
1200-1400	11	28	N	0	0	85	2	0	8	6	0	0	0
1400-1600	11	28	N	0	0	92	0	0	0	6	0	2	0
1600-1800	12	28	N	0	0	94	0	0	0	6	0	0	0
1800-2000	11	23	N	0	0	96	1	0	0	0	1	0	1
2000-2200	11	23	N	0	0	91	9	0	0	0	0	0	0
2200-2400	11	23	N	0	0	91	9	0	0	0	0	0	0

SITE 55 REMOTE RADAR, SURFACE JULY,1966

TIME	WIND SPEED (KNOTS) AVG	MAX	MAX DIR		CALM	DIRECTION VAR	N	NE	PERCENTAGE E	SE	DISTRIBUTION S	SW	W	NW
0000-0300	12	23	N		0	0	81	19	0	0	0	0	0	0
0300-0600	12	28	N		0	0	69	29	1	0	1	0	0	0
0600-0900	10	28	N		0	0	74	24	0	0	0	0	0	2
0900-1200	10	23	NE	N	0	0	76	11	2	6	1	0	0	5
1200-1500	11	28	N		0	0	87	1	0	5	6	0	1	0
1500-1800	11	28	N		0	0	94	0	0	0	6	0	0	0
1800-2100	11	23	N		0	0	94	4	0	0	0	1	0	1
2100-2400	11	23	N		0	0	91	9	0	0	0	0	0	0

SITE 55 REMOTE RADAR, SURFACE JULY,1966

TIME	WIND SPEED (KNOTS) AVG	MAX	MAX DIR	CALM	DIRECTION PERCENTAGE DISTRIBUTION VAR	N	NE	E	SE	S	SW	W	NW
0000-0400	12	23	N	0	0	79	21	0	0	0	0	0	0
0400-0800	11	28	N	0	0	69	28	1	0	1	0	0	1
0800-1200	10	23	N NE	0	0	77	13	1	4	1	0	0	4
1200-1600	11	28	N	0	0	88	1	0	4	6	0	1	0
1600-2000	11	28	N	0	0	95	1	0	0	3	1	0	1
2000-2400	11	23	N	0	0	91	9	0	0	0	0	0	0

SITE 55 REMOTE RADAR, SURFACE JULY, 1966

TIME	WIND SPEED (KNOTS) AVG	MAX	MAX DIR	CALM	DIRECTION PERCENTAGE DISTRIBUTION VAR	N	NE	E	SE	S	SW	W	NW
0000-0600	12	28	N	0	0	75	24	0	0	0	0	0	0
0600-1200	10	28	N	0	0	75	17	1	3	0	0	0	3
1200-1800	11	28	N	0	0	90	1	0	3	6	0	1	0
1800-2400	11	23	N	0	0	93	6	0	0	0	0	0	0

SITE 31 SUDDEN RANCH MAY,1966

TIME	WIND SPEED (KNOTS) AVG	MAX	MAX DIR	CALM	DIRECTION PERCENTAGE DISTRIBUTION VAR	N	NE	E	SE	S	SW	W	NW
0000-0030	8	18	N	0	0	66	21	3	7	0	0	0	3
0030-0100	7	18	N	0	0	64	21	0	4	7	0	0	4
0100-0130	6	13	N	0	4	64	18	4	4	4	0	0	4
0130-0200	6	13	N	0	4	61	18	4	4	0	0	4	7
0200-0230	6	13	N	0	0	61	25	0	7	4	0	0	4
0230-0300	7	13	SE N	0	0	46	29	0	11	0	4	0	11
0300-0330	7	13	N SE	0	0	56	30	0	11	0	0	0	4
0330-0400	7	13	N	0	0	59	19	0	11	0	4	0	7
0400-0430	6	13	N	0	0	52	33	4	4	4	4	0	0
0430-0500	6	13	N	0	4	59	30	0	4	0	0	4	0
0500-0530	6	13	N	0	4	63	26	0	4	0	0	0	4
0530-0600	6	13	N	0	0	69	27	0	4	0	0	0	0
0600-0630	5	13	N	0	0	76	12	0	4	0	0	4	4
0630-0700	5	13	N	0	4	81	0	0	4	0	4	0	8
0700-0730	5	18	N	0	4	65	4	0	8	0	4	0	15
0730-0800	5	18	N	0	0	46	0	0	4	0	4	4	42
0800-0830	5	18	N	0	0	36	0	0	0	4	8	8	44
0830-0900	5	18	N	0	0	35	9	0	0	0	13	9	35
0900-0930	5	18	N	0	0	48	0	0	4	0	13	4	30
0930-1000	5	18	N	0	0	36	0	0	4	0	12	8	40
1000-1030	6	18		0	4	27	0	0	4	0	12	15	38
1030-1100	6	18		0	7	15	0	0	4	0	11	15	48
1100-1130	7	18		0	4	11	0	0	7	0	15	11	52
1130-1200	7	18	N	0	4	11	0	0	7	0	15	11	52
1200-1230	7	18	N	0	7	11	0	0	0	7	11	11	52
1230-1300	8	18		0	4	11	0	0	0	0	22	7	56
1300-1330	8	18		0	4	8	0	0	0	0	15	8	65

SITE 31 SUDDEN RANCH MAY, 1966

TIME	WIND SPEED (KNOTS) AVG	MAX	MAX DIR	CALM	DIRECTION PERCENTAGE DISTRIBUTION VAR	N	NE	E	SE	S	SW	W	NW
1330-1400	7	18		0	4	8	0	0	0	4	8	8	69
1400-1430	8	18		0	4	19	0	0	0	0	12	8	58
1430-1500	8	18		0	4	19	0	0	0	0	8	4	65
1500-1530	8	18	N	0	0	27	0	0	0	0	12	0	62
1530-1600	8	18	N	0	4	28	0	0	0	0	4	8	56
1600-1630	9	18	N	0	4	44	0	0	0	0	4	0	48
1630-1700	9	18	N	0	0	48	0	0	0	4	4	0	44
1700-1730	9	18	N	0	0	56	0	0	0	4	4	0	37
1730-1800	9	18	N	0	0	69	0	0	0	4	4	0	23
1800-1830	9	18	N	0	0	74	0	0	4	0	4	0	19
1830-1900	9	18	N	0	0	81	0	0	4	4	0	0	11
1900-1930	9	18	N	0	4	85	4	0	4	0	0	0	4
1930-2000	9	18	N	0	4	79	11	0	4	0	0	0	4
2000-2030	9	18	N	0	0	71	14	0	4	4	0	0	7
2030-2100	9	18	N	0	0	75	14	0	4	4	0	0	4
2100-2130	9	18	N	0	4	79	11	0	4	0	0	0	4
2130-2200	9	18	N	0	4	79	11	0	4	0	0	0	4
2200-2230	9	18	N	0	4	82	7	0	4	0	0	0	4
2230-2300	9	18	N	0	0	82	7	0	7	0	0	0	4
2300-2330	9	18	N	0	0	82	11	0	7	0	0	0	0
2330-2400	8	18	N	0	0	82	11	0	7	0	0	0	0

SITE 31 SUDDEN RANCH MAY,1966

TIME	WIND SPEED (KNOTS) AVG	MAX	MAX DIR	CALM	DIRECTION PERCENTAGE DISTRIBUTION VAR	N	NE	E	SE	S	SW	W	NW
0000-0100	7	18	N	0	0	65	21	2	5	4	0	0	4
0100-0200	6	13	N	0	4	63	18	4	4	2	0	2	5
0200-0300	7	13	N SE	0	0	54	27	0	9	2	2	0	7
0300-0400	7	13	N SE	0	0	57	24	0	11	0	2	0	6
0400-0500	6	13	N	0	2	56	31	2	4	2	2	2	0
0500-0600	6	13	N	0	2	66	26	0	4	0	0	0	2
0600-0700	5	13	N	0	2	78	6	0	4	0	2	2	6
0700-0800	5	18	N	0	2	56	2	0	6	0	4	2	29
0800-0900	5	18	N	0	0	35	4	0	0	2	10	8	40
0900-1000	5	18	N	0	0	42	0	0	4	0	13	6	35
1000-1100	6	18		0	6	21	0	0	4	0	11	15	43
1100-1200	7	18	N	0	4	11	0	0	7	0	15	11	52
1200-1300	7	18	N	0	6	11	0	0	0	4	17	9	54
1300-1400	8	18		0	4	8	0	0	0	2	12	8	67
1400-1500	8	18		0	4	19	0	0	0	0	10	6	62
1500-1600	8	18	N	0	2	27	0	0	0	0	8	4	59
1600-1700	9	18	N	0	2	46	0	0	0	2	4	0	46
1700-1800	9	18	N	0	0	62	0	0	0	4	4	0	30
1800-1900	9	18	N	0	0	78	0	0	4	2	2	0	15
1900-2000	9	18	N	0	4	82	7	0	4	0	0	0	4
2000-2100	9	18	N	0	0	73	14	0	4	4	0	0	5
2100-2200	9	18	N	0	4	79	11	0	4	0	0	0	4
2200-2300	9	18	N	0	2	82	7	0	5	0	0	0	4
2300-2400	9	18	N	0	0	82	11	0	7	0	0	0	0

SITE 31 SUDDEN RANCH MAY, 1966

TIME	WIND SPEED (KNOTS) AVG	MAX	MAX DIR	DIRECTION PERCENTAGE DISTRIBUTION CALM	VAR	N	NE	E	SE	S	SW	W	NW
0000-0200	7	18	N	0	2	64	19	3	4	3	0	1	4
0200-0400	7	13	N SE	0	0	55	25	0	10	1	2	0	6
0400-0600	6	13	N	0	2	61	29	1	4	1	1	1	1
0600-0800	5	18	N	0	2	67	4	0	5	0	3	2	17
0800-1000	5	18	N	0	0	39	2	0	2	1	11	7	38
1000-1200	6	18	N	0	5	16	0	0	6	0	13	13	48
1200-1400	7	18	N	0	5	9	0	0	0	3	14	8	60
1400-1600	8	18	N	0	3	23	0	0	0	0	9	5	60
1600-1800	9	18	N	0	1	54	0	0	0	3	4	0	38
1800-2000	9	18	N	0	2	80	4	0	4	1	1	0	9
2000-2200	9	18	N	0	2	76	13	0	4	2	0	0	4
2200-2400	9	18	N	0	1	82	9	0	6	0	0	0	2

SITE 31 SUDDEN RANCH MAY, 1966

TIME	WIND SPEED (KNOTS) AVG	MAX	MAX DIR	CALM	DIRECTION PERCENTAGE DISTRIBUTION VAR	N	NE	E	SE	S	SW	W	NW
0000-0300	7	18	N	0	1	60	22	2	6	2	1	1	5
0300-0600	6	13	N SE	0	1	60	27	1	6	1	1	1	2
0600-0900	5	18	N	0	1	57	4	0	3	1	5	4	25
0900-1200	6	18	N	0	3	24	0	0	5	0	13	11	44
1200-1500	8	18	N	0	4	13	0	0	0	2	13	8	61
1500-1800	9	18	N	0	1	46	0	0	0	2	5	1	45
1800-2100	9	18	N	0	1	78	7	0	4	2	1	0	8
2100-2400	9	18	N	0	2	81	10	0	5	0	0	0	2

SITE 31 SUDDEN RANCH MAY,1966

TIME	WIND SPEED (KNOTS) AVG	MAX	MAX DIR	CALM	DIRECTION VAR	N	NE	PERCENTAGE E	SE	DISTRIBUTION S	SW	W	NW
0000-0400	7	18	N	0	1	60	22	1	7	2	1	0	5
0400-0800	6	18	N	0	2	64	17	0	4	0	2	1	9
0800-1200	6	18	N	0	2	27	1	0	4	0	12	10	43
1200-1600	8	18	N	0	4	16	0	0	0	1	11	7	60
1600-2000	9	18	N	0	1	67	2	0	2	2	2	0	24
2000-2400	9	18	N	0	1	79	11	0	5	1	0	0	3

SITE 31 SUDDEN RANCH MAY,1966

TIME	WIND SPEED (KNOTS) AVG	MAX	MAX DIR	CALM	DIRECTION PERCENTAGE DISTRIBUTION VAR	N	NE	E	SE	S	SW	W	NW
0000-0600	6	18	N	0	1	60	25	1	6	2	1	1	4
0600-1200	6	18	N	0	2	40	2	0	4	0	9	8	34
1200-1800	8	18	N	0	3	29	0	0	0	2	9	4	53
1800-2400	9	18	N	0	2	79	8	0	5	1	0	0	5

SITE 31 SUDDEN RANCH JUNE, 1966

TIME	WIND SPEED (KNOTS) AVG	MAX	MAX DIR	CALM	DIRECTION PERCENTAGE DISTRIBUTION VAR	N	NE	E	SE	S	SW	W	NW
0000-0030	10	18	N SE	0	0	54	27	4	8	0	8	0	0
0030-0100	9	18	N	0	4	56	28	4	4	0	4	0	0
0100-0130	9	18	N SE	0	0	72	12	8	4	0	0	4	0
0130-0200	8	18	N	0	0	72	20	0	4	0	0	4	0
0200-0230	8	18	N	0	0	65	23	0	4	0	0	0	8
0230-0300	8	18	N	0	0	69	19	8	4	0	0	0	0
0300-0330	8	18	N	0	0	58	31	0	4	4	0	0	4
0330-0400	8	18	N	0	0	62	27	4	0	0	8	0	0
0400-0430	8	18	N	0	4	58	27	4	0	4	0	4	0
0430-0500	8	18	N	0	4	62	12	12	0	0	4	4	4
0500-0530	7	18	N	0	4	65	15	0	4	0	8	4	0
0530-0600	8	18	N	0	0	62	15	8	0	0	12	4	0
0600-0630	8	18	N NE	0	0	60	20	4	0	0	8	4	4
0630-0700	8	18	N	0	0	56	16	0	4	4	8	0	12
0700-0730	8	18	N	0	4	52	20	0	0	0	12	4	8
0730-0800	8	18	N	0	4	64	4	0	0	4	8	8	8
0800-0830	8	18	N NE	0	0	58	4	0	4	13	0	8	13
0830-0900	8	18	N	0	4	54	0	0	0	4	8	23	8
0900-0930	8	18	N	0	0	50	0	0	0	8	12	12	19
0930-1000	9	18	N	0	0	54	0	0	0	8	8	19	12
1000-1030	9	18	N	0	0	52	0	0	0	7	11	19	11
1030-1100	9	18	N	0	0	50	0	0	0	7	25	7	11
1100-1130	9	18	N	0	0	50	0	0	0	7	14	14	14
1130-1200	8	18	N	0	0	50	0	0	0	4	14	14	18
1200-1230	9	18	N	0	0	46	4	0	0	4	7	14	25
1230-1300	10	18	N	0	4	57	0	0	0	4	7	7	21
1300-1330	10	18	N	0	4	56	0	0	0	0	7	4	30

SITE 31 SUDDEN RANCH JUNE, 1966

TIME	WIND SPEED (KNOTS) AVG	MAX	MAX DIR		CALM	DIRECTION VAR	N	NE	PERCENTAGE E	SE	DISTRIBUTION S	SW	W	NW
1330-1400	11	18	NW	N	0	0	59	0	0	0	4	4	7	26
1400-1430	11	18	N		0	4	67	0	0	0	0	4	4	22
1430-1500	11	18	N		0	0	67	0	0	0	4	0	0	30
1500-1530	11	18	N		0	0	73	0	0	0	0	4	0	23
1530-1600	12	18	N		0	0	88	0	0	0	0	4	0	8
1600-1630	11	23	N		0	0	88	4	0	0	0	0	4	4
1630-1700	11	18	N	NE	0	0	92	4	0	0	0	0	0	4
1700-1730	12	18	N	NE	0	0	89	7	0	0	0	0	0	4
1730-1800	11	18	N	NE	0	0	85	12	0	0	0	0	0	4
1800-1830	12	18	N	NE	0	0	85	15	0	0	0	0	0	0
1830-1900	12	18	N	NE	0	0	77	19	0	0	0	0	0	4
1900-1930	12	18	N	NE	0	0	81	15	0	0	0	0	4	0
1930-2000	12	18	N	NE	0	0	62	35	0	0	0	0	0	4
2000-2030	12	18	N		0	0	65	35	0	0	0	0	0	0
2030-2100	12	18	N		0	0	65	31	4	0	0	0	0	0
2100-2130	12	18	N		0	0	65	27	8	0	0	0	0	0
2130-2200	12	18	N		0	0	73	19	4	0	4	0	0	0
2200-2230	11	18	N		0	0	58	35	0	0	4	4	0	0
2230-2300	11	18	N		0	0	58	35	4	0	4	0	0	0
2300-2330	10	18	N		0	4	65	27	4	0	0	0	0	0
2330-2400	9	18	N		0	4	62	19	4	4	4	0	4	0

SITE 31 SUDDEN RANCH JUNE,1966

TIME	WIND SPEED (KNOTS) AVG	MAX	MAX DIR	DIRECTION PERCENTAGE DISTRIBUTION CALM	VAR	N	NE	E	SE	S	SW	W	NW
0000-0100	9	18	N SE	0	2	55	27	4	6	0	6	0	0
0100-0200	9	18	N SE	0	0	72	16	4	4	0	0	4	0
0200-0300	8	18	N	0	0	67	21	4	4	0	0	0	4
0300-0400	8	18	N	0	0	60	29	2	2	2	4	0	2
0400-0500	8	18	N	0	4	60	19	8	0	2	2	4	2
0500-0600	7	18	N	0	2	63	15	4	2	0	10	4	0
0600-0700	8	18	N NE	0	0	58	18	2	2	2	8	2	8
0700-0800	8	18	N	0	4	58	12	0	0	2	10	6	8
0800-0900	8	18	N NE	0	2	56	2	0	2	8	4	16	10
0900-1000	8	18	N	0	0	52	0	0	0	8	10	15	15
1000-1100	9	18	N	0	0	51	0	0	0	7	18	13	11
1100-1200	9	18	N	0	0	50	0	0	0	5	14	14	16
1200-1300	10	18	N	0	2	52	2	0	0	4	7	11	23
1300-1400	10	18	N NW	0	2	57	0	0	0	2	6	6	28
1400-1500	11	18	N	0	2	67	0	0	0	2	2	2	26
1500-1600	11	18	N	0	0	81	0	0	0	0	4	0	15
1600-1700	11	23	N	0	0	90	4	0	0	0	0	2	4
1700-1800	12	18	N NE	0	0	87	9	0	0	0	0	0	4
1800-1900	12	18	N NE	0	0	81	17	0	0	0	0	0	2
1900-2000	12	18	N NE	0	0	71	25	0	0	0	0	2	2
2000-2100	12	18	N	0	0	65	33	2	0	0	0	0	0
2100-2200	12	18	N	0	0	69	23	6	0	2	0	0	0
2200-2300	11	18	N	0	0	58	35	2	0	4	2	0	0
2300-2400	10	18	N	0	4	63	23	4	2	2	0	2	0

SITE 31 SUDDEN RANCH JUNE,1966

TIME	WIND SPEED (KNOTS) AVG	MAX	MAX DIR		CALM	DIRECTION PERCENTAGE DISTRIBUTION VAR	N	NE	E	SE	S	SW	W	NW
0000-0200	9	18	N	SE	0	1	63	22	4	5	0	3	2	0
0200-0400	8	18	N		0	0	63	25	3	3	1	2	0	3
0400-0600	8	18	N		0	3	62	17	6	1	1	6	4	1
0600-0800	8	18	N	NE	0	2	58	15	1	1	2	9	4	8
0800-1000	8	18	N	NE	0	1	54	1	0	1	8	7	16	13
1000-1200	9	18	N		0	0	50	0	0	0	6	16	14	14
1200-1400	10	18	N	NW	0	2	55	1	0	0	3	6	8	25
1400-1600	11	18	N		0	1	74	0	0	0	1	3	1	21
1600-1800	12	23	N		0	0	89	7	0	0	0	0	1	4
1800-2000	12	18	N	NE	0	0	76	21	0	0	0	0	1	2
2000-2200	12	18	N		0	0	67	28	4	0	1	0	0	0
2200-2400	10	18	N		0	2	61	29	3	1	3	1	1	0

SITE 31 SUDDEN RANCH JUNE,1966

TIME	WIND SPEED (KNOTS) AVG	MAX	MAX DIR	CALM	DIRECTION PERCENTAGE DISTRIBUTION VAR	N	NE	E	SE	S	SW	W	NW
0000-0300	9	18	N SE	0	1	65	22	4	5	0	2	1	1
0300-0600	8	18	N	0	2	61	21	4	1	1	5	3	1
0600-0900	8	18	N NE	0	2	57	11	1	1	4	7	8	9
0900-1200	9	18	N	0	0	51	0	0	0	7	14	14	14
1200-1500	10	18	N NW	0	2	59	1	0	0	2	5	6	26
1500-1800	11	23	N	0	0	86	4	0	0	0	1	1	8
1800-2100	12	18	N NE	0	0	73	25	1	0	0	0	1	1
2100-2400	11	18	N	0	1	63	27	4	1	3	1	1	0

SITE 31 SUDDEN RANCH JUNE, 1966

TIME	WIND SPEED (KNOTS) AVG	MAX	MAX DIR	CALM	VAR	N	NE	E	SE	S	SW	W	NW
					DIRECTION PERCENTAGE DISTRIBUTION								
0000-0400	9	18	N SE	0	0	63	23	3	4	0	2	1	1
0400-0800	8	18	N NE	0	2	60	16	3	1	1	7	4	4
0800-1200	8	18	N NE	0	0	52	0	0	0	7	12	15	13
1200-1600	11	18	N NW	0	1	64	0	0	0	2	5	5	23
1600-2000	12	23	N	0	0	82	14	0	0	0	0	1	3
2000-2400	11	18	N	0	1	64	28	3	0	2	0	0	0

SITE 31 SUDDEN RANCH JUNE,1966

TIME	WIND SPEED (KNOTS) AVG	MAX	MAX DIR	CALM	VAR	N	NE	E	SE	S	SW	W	NW
0000-0600	8	18	N SE	0	1	63	21	4	3	1	4	2	1
0600-1200	8	18	N NE	0	1	54	5	0	1	5	11	11	12
1200-1800	11	23	N	0	1	72	2	0	0	1	3	3	17
1800-2400	11	18	N NE	0	1	68	26	2	0	1	0	1	1

The columns VAR through NW are printed under the spanning heading DIRECTION PERCENTAGE DISTRIBUTION.

SITE 31 SUDDEN RANCH JULY,1966

TIME	WIND SPEED (KNOTS) AVG	MAX	MAX DIR	CALM	DIRECTION PERCENTAGE DISTRIBUTION VAR	N	NE	E	SE	S	SW	W	NW
0000-0030	13	18	NE N	0	0	55	45	0	0	0	0	0	0
0030-0100	12	18	NE N	0	0	75	25	0	0	0	0	0	0
0100-0130	12	18	NE N	0	0	80	20	0	0	0	0	0	0
0130-0200	11	18	N NE	0	0	71	29	0	0	0	0	0	0
0200-0230	11	18	N	0	0	76	24	0	0	0	0	0	0
0230-0300	12	18	NE N	0	0	70	30	0	0	0	0	0	0
0300-0330	11	18	N NE	0	0	75	25	0	0	0	0	0	0
0330-0400	10	18	N NE	0	0	74	26	0	0	0	0	0	0
0400-0430	10	18	N NE	0	0	79	21	0	0	0	0	0	0
0430-0500	10	18	N NE	0	0	68	32	0	0	0	0	0	0
0500-0530	8	18	N	0	0	72	28	0	0	0	0	0	0
0530-0600	8	18	N	0	0	61	39	0	0	0	0	0	0
0600-0630	9	18	N	0	0	89	11	0	0	0	0	0	0
0630-0700	9	18	N	0	0	94	6	0	0	0	0	0	0
0700-0730	9	18	N	0	0	94	6	0	0	0	0	0	0
0730-0800	9	18	N	0	0	89	6	0	0	0	0	0	6
0800-0830	8	18	N	0	0	78	6	0	0	0	0	0	17
0830-0900	8	18	N	0	0	71	0	0	0	0	0	0	29
0900-0930	8	18	N	0	0	69	0	0	0	0	0	6	25
0930-1000	9	18	N	0	0	71	0	0	0	0	0	12	18
1000-1030	8	18	N	0	0	71	0	0	0	0	0	6	24
1030-1100	8	18	N	0	0	71	0	0	0	0	0	6	24
1100-1130	9	18	N	0	0	65	0	0	0	0	0	6	29
1130-1200	9	18	N	0	0	88	0	0	0	0	0	6	6
1200-1230	9	18	N	0	0	81	0	0	0	0	0	6	13
1230-1300	9	18	N	0	0	81	0	0	0	0	0	0	19
1300-1330	9	18	N	0	0	88	0	0	0	0	0	0	13

SITE 31 SUDDEN RANCH JULY,1966

TIME	WIND SPEED (KNOTS) AVG	MAX	MAX DIR	CALM	DIRECTION PERCENTAGE DISTRIBUTION VAR	N	NE	E	SE	S	SW	W	NW
1330-1400	10	18	N	0	0	94	0	0	0	0	0	0	6
1400-1430	11	18	N	0	0	95	0	0	0	0	0	0	5
1430-1500	11	18	N	0	0	95	0	0	0	0	0	0	5
1500-1530	11	18	NE N	0	0	95	5	0	0	0	0	0	0
1530-1600	13	18	N	0	0	100	0	0	0	0	0	0	0
1600-1630	13	18	N	0	0	100	0	0	0	0	0	0	0
1630-1700	13	18	NE N	0	0	95	5	0	0	0	0	0	0
1700-1730	12	18	NE N	0	0	95	5	0	0	0	0	0	0
1730-1800	12	18	N NE	0	0	81	19	0	0	0	0	0	0
1800-1830	14	18	N NE	0	0	84	16	0	0	0	0	0	0
1830-1900	12	18	N NE	0	0	69	31	0	0	0	0	0	0
1900-1930	12	18	N NE	0	0	69	31	0	0	0	0	0	0
1930-2000	12	18	N NE	0	0	76	24	0	0	0	0	0	0
2000-2030	11	18	N NE	0	0	76	24	0	0	0	0	0	0
2030-2100	11	18	N NE	0	0	71	29	0	0	0	0	0	0
2100-2130	13	18	N	0	0	76	24	0	0	0	0	0	0
2130-2200	13	18	NE N	0	0	53	47	0	0	0	0	0	0
2200-2230	13	18	N NE	0	0	63	37	0	0	0	0	0	0
2230-2300	12	18	NE N	0	0	58	42	0	0	0	0	0	0
2300-2330	13	18	N NE	0	0	60	40	0	0	0	0	0	0
2330-2400	13	18	N NE	0	0	55	45	0	0	0	0	0	0

SITE 31 SUDDEN RANCH JULY,1966

TIME	WIND SPEED (KNOTS) AVG	MAX	MAX DIR	CALM	DIRECTION VAR	N	NE	PERCENTAGE E	SE	DISTRIBUTION S	SW	W	NW
0000-0100	13	18	NE N	0	0	65	35	0	0	0	0	0	0
0100-0200	12	18	NE N	0	0	76	24	0	0	0	0	0	0
0200-0300	11	18	N NE	0	0	73	27	0	0	0	0	0	0
0300-0400	11	18	N NE	0		74	26	0	0	0	0	0	0
0400-0500	10	18	N NE	0	0	74	26	0	0	0	0	0	0
0500-0600	8	18	N	0	0	67	33	0	0	0	0	0	0
0600-0700	9	18	N	0	0	92	8	0	0	0	0	0	0
0700-0800	9	18	N	0	0	92	6	0	0	0	0	0	3
0800-0900	8	18	N	0	0	74	3	0	0	0	0	0	23
0900-1000	8	18	N	0	0	70	0	0	0	0	0	9	21
1000-1100	8	18	N	0	0	71	0	0	0	0	0	6	24
1100-1200	9	18	N	0	0	76	0	0	0	0	0	6	18
1200-1300	9	18	N	0	0	81	0	0	0	0	0	3	16
1300-1400	10	18	N	0	0	91	0	0	0	0	0	0	9
1400-1500	11	18	N	0	0	95	0	0	0	0	0	0	5
1500-1600	12	18	NE N	0	0	97	2	0	0	0	0	0	0
1600-1700	13	18	N NE	0	0	98	2	0	0	0	0	0	0
1700-1800	12	18	NE N	0	0	89	11	0	0	0	0	0	0
1800-1900	13	18	N NE	0	0	77	23	0	0	0	0	0	0
1900-2000	12	18	N NE	0	0	73	27	0	0	0	0	0	0
2000-2100	11	18	N NE	0	0	74	26	0	0	0	0	0	0
2100-2200	13	18	N NE	0	0	64	36	0	0	0	0	0	0
2200-2300	13	18	N NE	0	0	61	39	0	0	0	0	0	0
2300-2400	13	18	N NE	0	0	57	42	0	0	0	0	0	0

SITE 31 SUDDEN RANCH JULY, 1966

TIME	WIND SPEED (KNOTS) AVG	MAX	MAX DIR		CALM	DIRECTION PERCENTAGE DISTRIBUTION VAR	N	NE	E	SE	S	SW	W	NW
0000-0200	12	18	NE	N	0	0	70	30	0	0	0	0	0	0
0200-0400	11	18	N	NE	0	0	74	26	0	0	0	0	0	0
0400-0600	9	18	N	NE	0	0	70	30	0	0	0	0	0	0
0600-0800	9	18	N		0	0	92	7	0	0	0	0	0	1
0800-1000	8	18	N		0	0	72	1	0	0	0	0	4	22
1000-1200	9	18	N		0	0	73	0	0	0	0	0	6	21
1200-1400	9	18	N		0	0	86	0	0	0	0	0	2	12
1400-1600	12	18	N	NE	0	0	96	1	0	0	0	0	0	3
1600-1800	13	18	N	NE	0	0	93	7	0	0	0	0	0	0
1800-2000	12	18	N	NE	0	0	75	25	0	0	0	0	0	0
2000-2200	12	18	N	NE	0	0	69	31	0	0	0	0	0	0
2200-2400	13	18	N	NE	0	0	59	41	0	0	0	0	0	0

SITE 31 SUDDEN RANCH JULY,1966

TIME	WIND SPEED (KNOTS) AVG	MAX	MAX DIR	CALM	DIRECTION VAR	N	NE	PERCENTAGE E	SE	DISTRIBUTION S	SW	W	NW
0000-0300	12	18	NE N	0	0	71	29	0	0	0	0	0	0
0300-0600	9	18	N NE	0	0	72	28	0	0	0	0	0	0
0600-0900	9	18	N	0	0	86	6	0	0	0	0	0	8
0900-1200	9	18	N	0	0	72	0	0	0	0	0	7	21
1200-1500	10	18	N	0	0	89	0	0	0	0	0	1	10
1500-1800	13	18	NE N	0	0	95	5	0	0	0	0	0	0
1800-2100	12	18	N NE	0	0	75	25	0	0	0	0	0	0
2100-2400	13	18	N NE	0	0	61	39	0	0	0	0	0	0

SITE 31 SUDDEN RANCH JULY, 1966

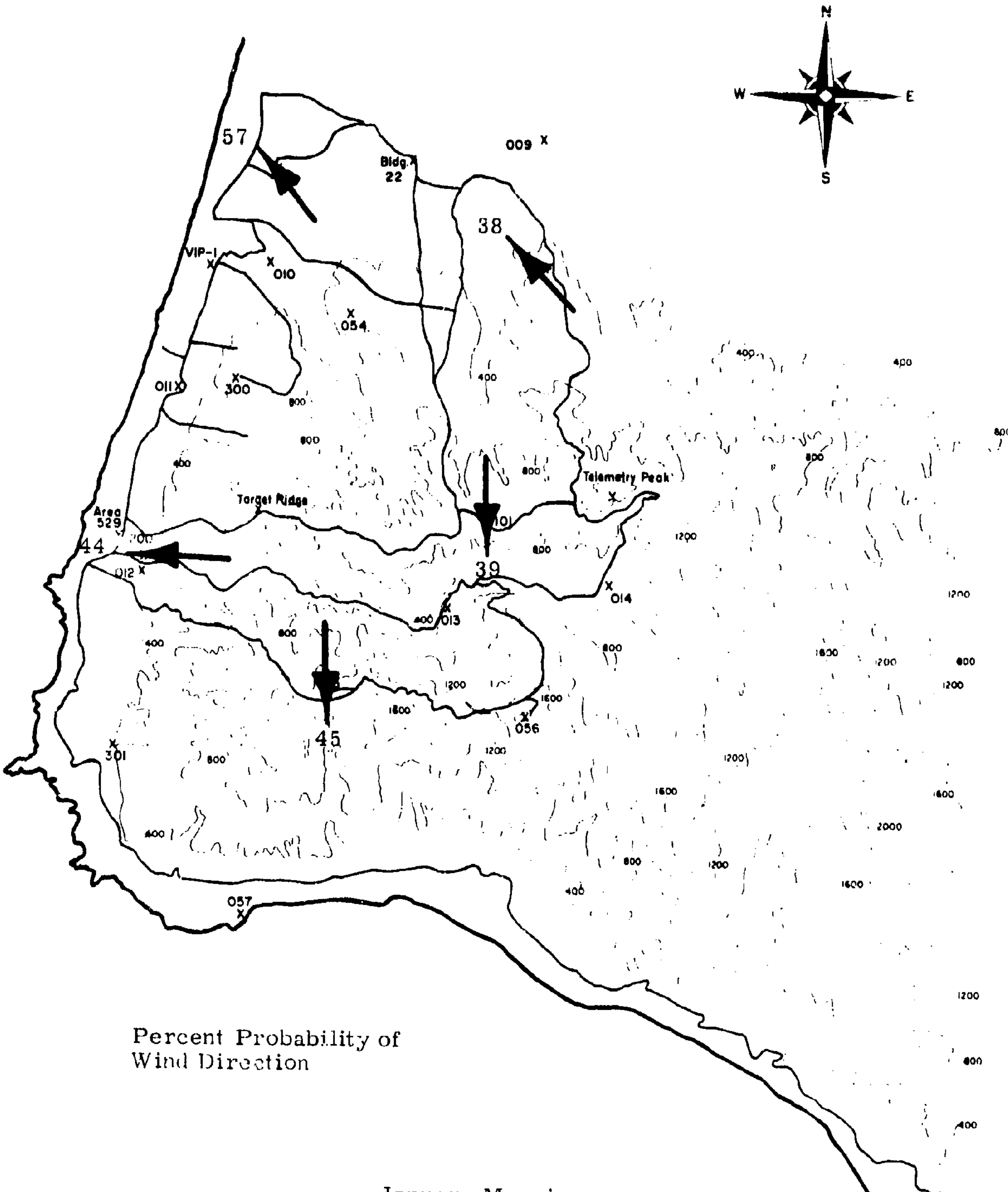
TIME	WIND SPEED (KNOTS) AVG	MAX	MAX DIR		CALM	DIRECTION VAR	N	NE	PERCENTAGE E	SE	DISTRIBUTION S	SW	W	NW
0000-0400	12	18	NE	N	0	0	72	28	0	0	0	0	0	0
0400-0800	9	18	N	NE	0	0	81	18	0	0	0	0	0	1
0800-1200	8	18	N		0	0	73	1	0	0	0	0	5	21
1200-1600	10	18	N	NE	0	0	92	1	0	0	0	0	1	7
1600-2000	12	18	N	NE	0	0	85	15	0	0	0	0	0	0
2000-2400	13	16	N	NE	0	0	64	36	0	0	0	0	0	0

SITE 31 SUDDEN RANCH JULY,1966

TIME	WIND SPEED (KNOTS) AVG	MAX	MAX DIR	CALM	DIRECTION PERCENTAGE DISTRIBUTION VAR	N	NE	E	SE	S	SW	W	NW
0000-0600	11	18	NE N	0	0	71	29	0	0	0	0	0	0
0600-1200	9	18	N	0	0	79	3	0	0	0	0	3	14
1200-1800	11	18	N NE	0	0	92	3	0	0	0	0	0	5
1800-2400	12	18	N NE	0	0	67	33	0	0	0	0	0	0

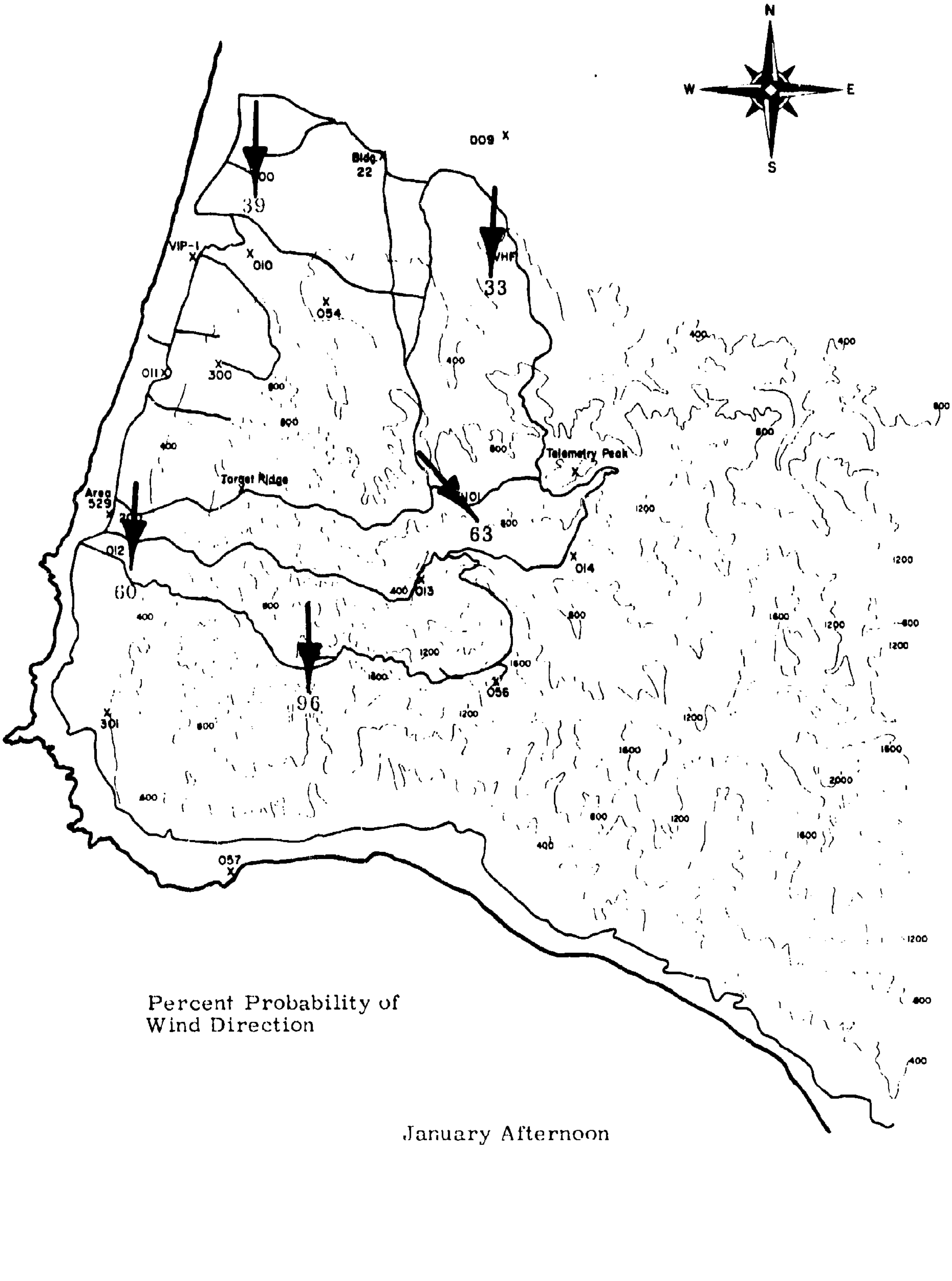
APPENDIX C

MOST PROBABLE WIND PATTERNS
OF MIDSEASON MONTHS FOR DAY AND NIGHT CONDITIONS



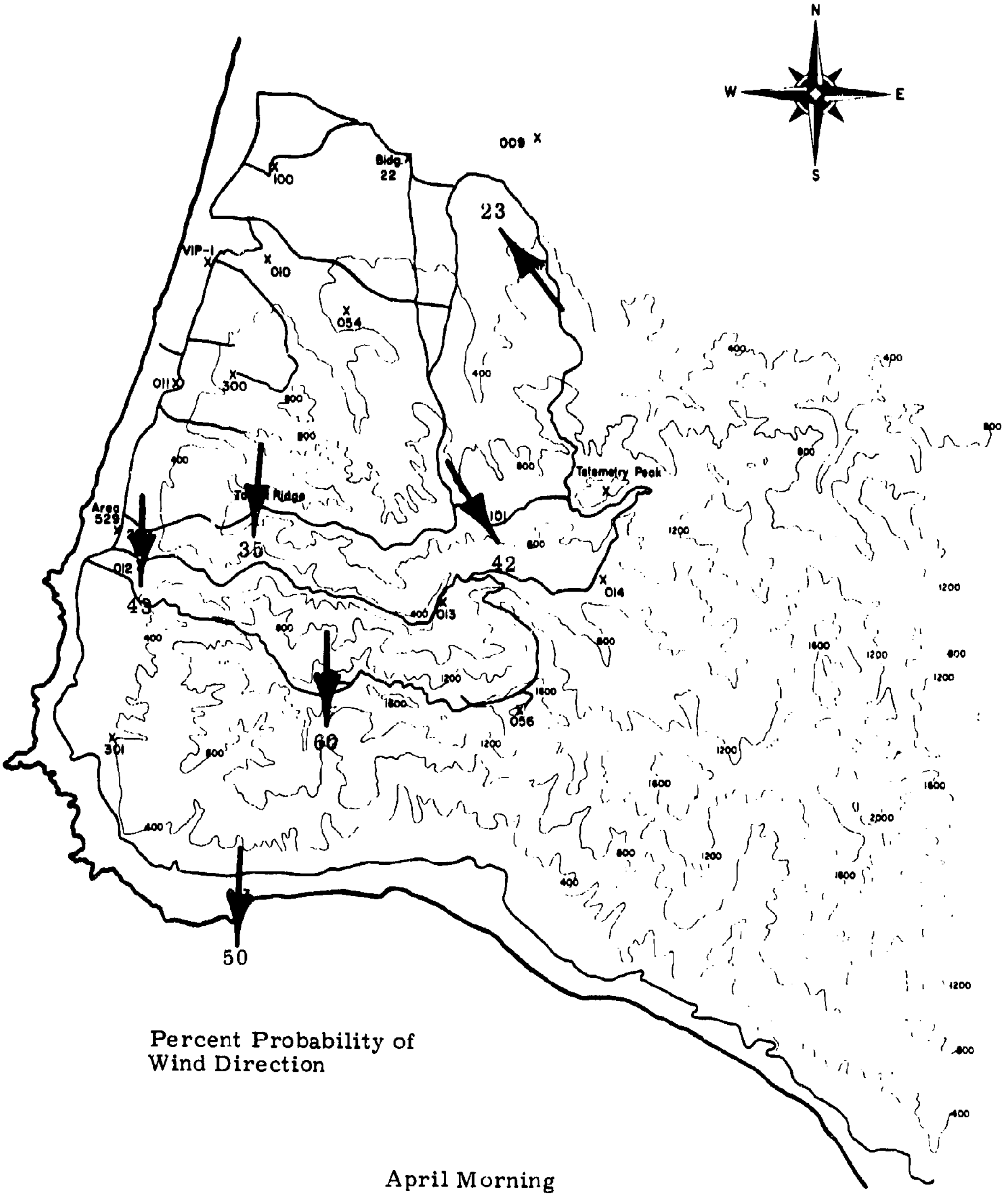
Percent Probability of
Wind Direction

January Morning



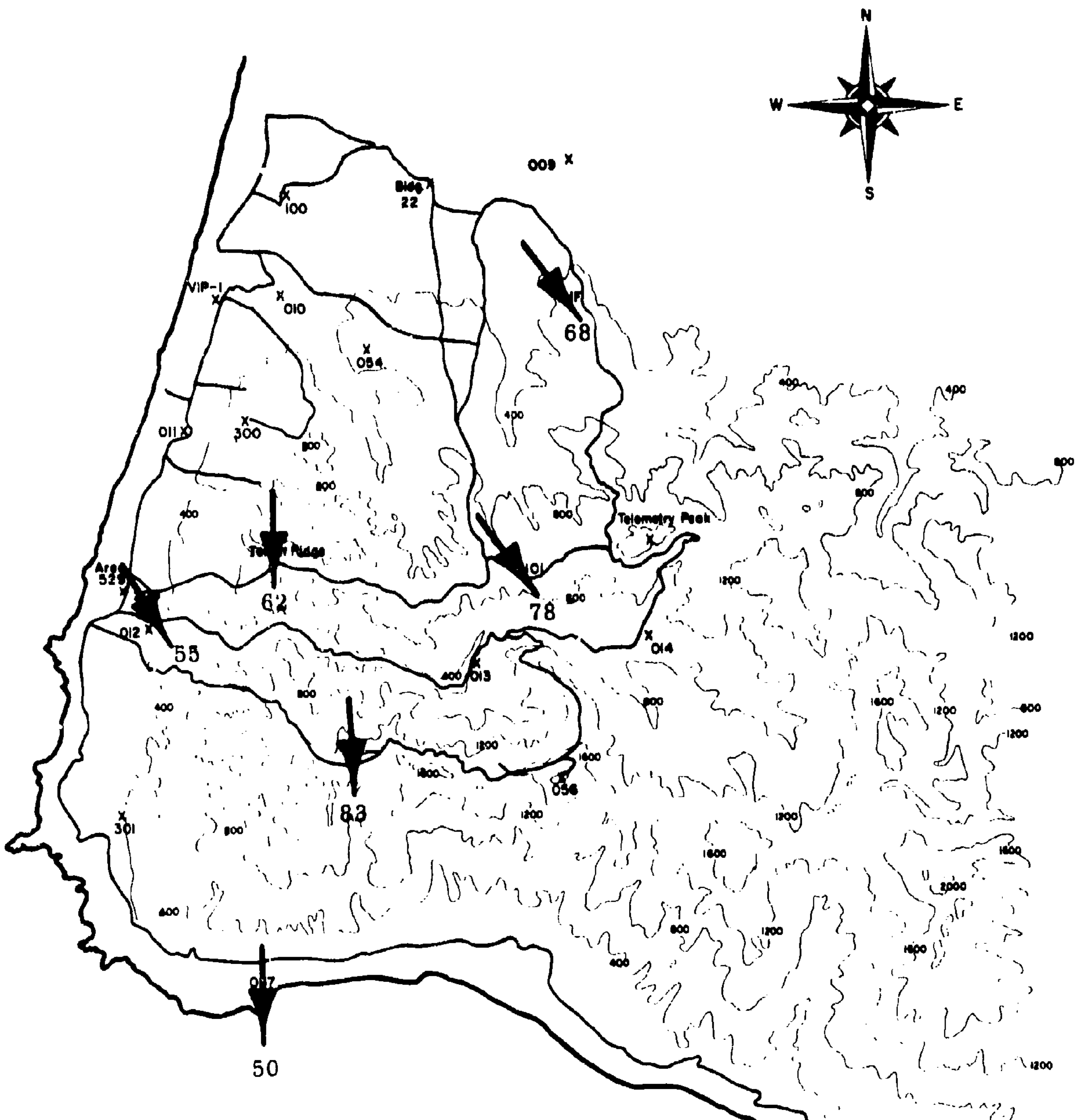
Percent Probability of Wind Direction

January Afternoon



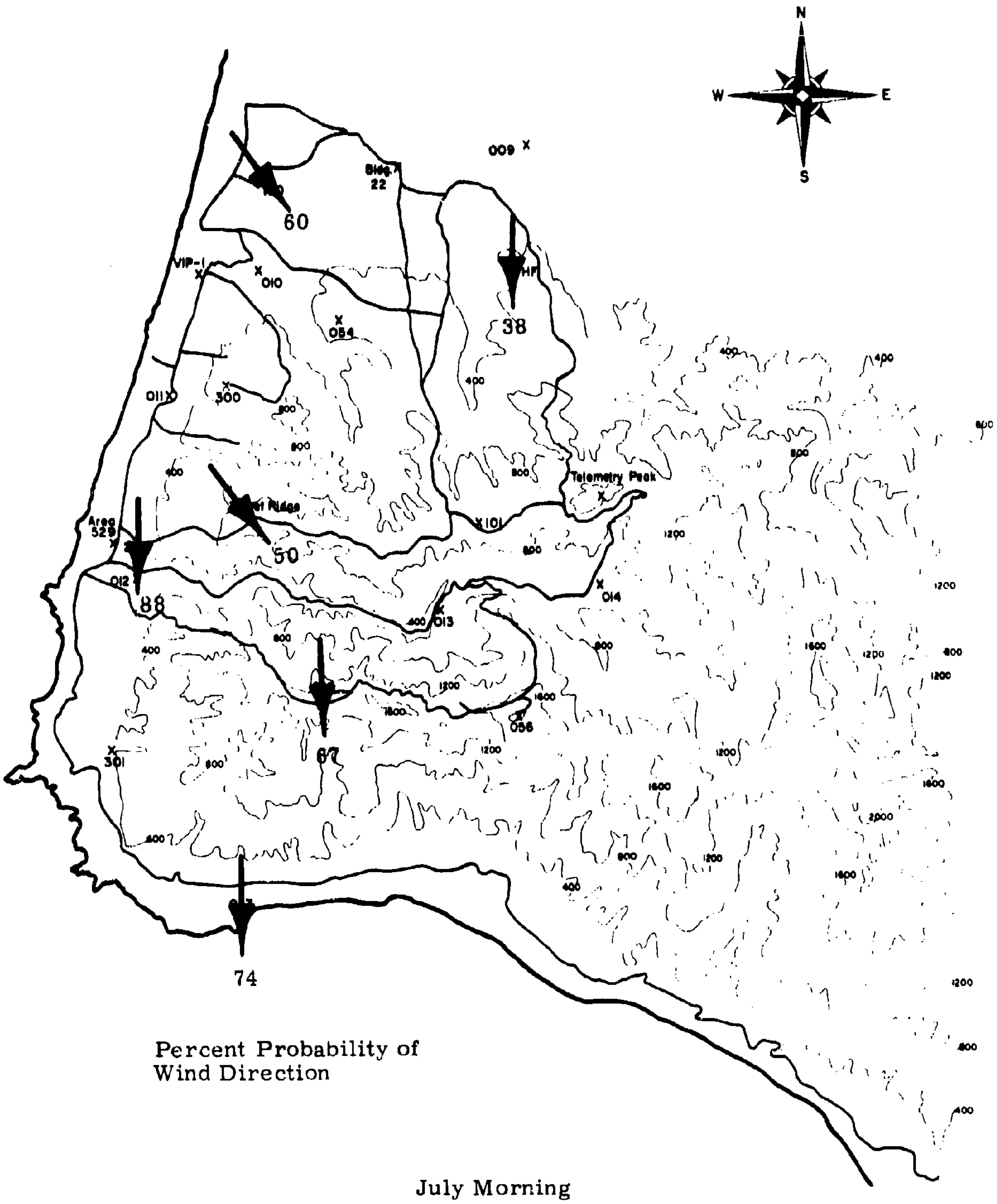
Percent Probability of
Wind Direction

April Morning



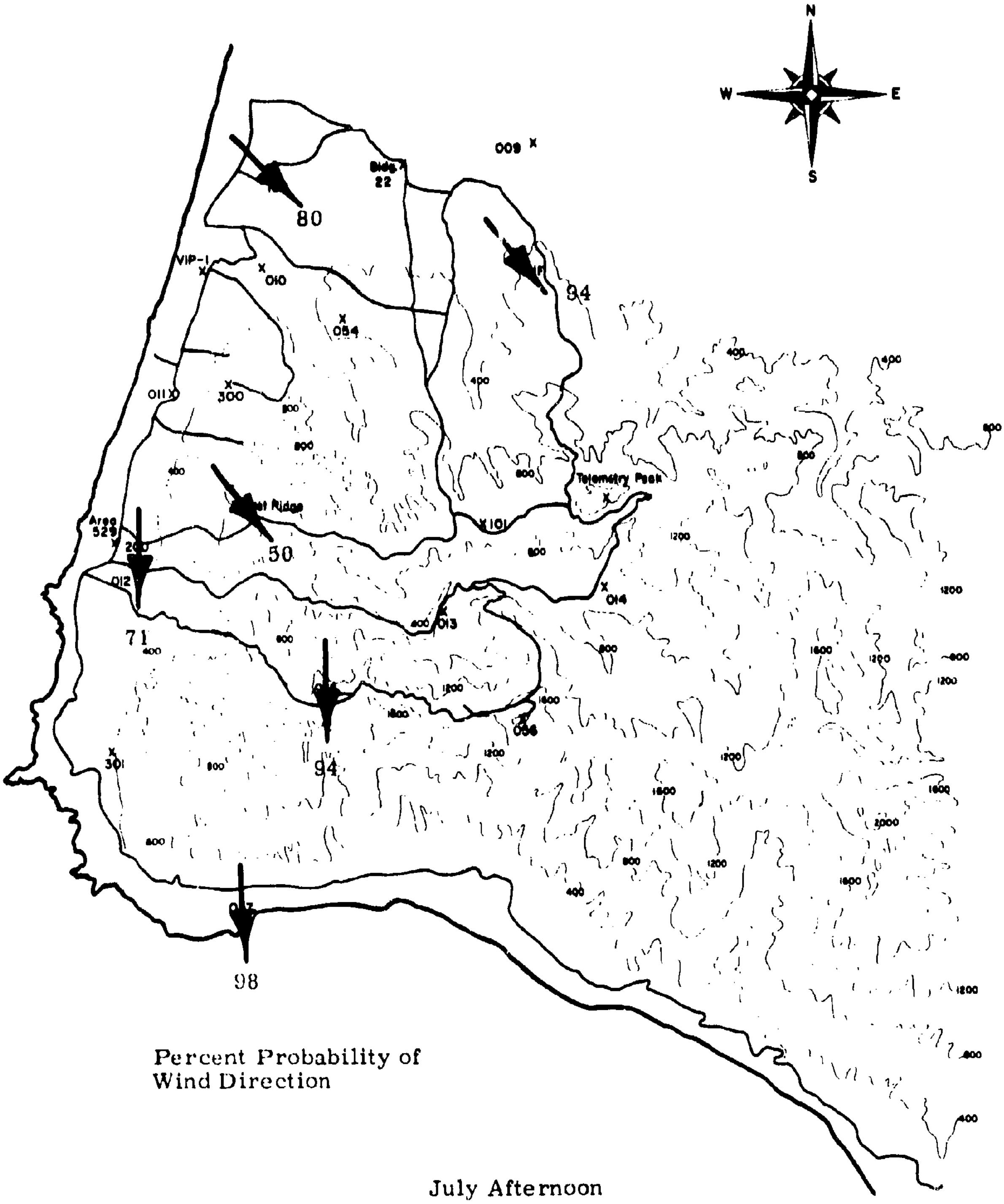
Percent Probability of
Wind Direction

April Afternoon



Percent Probability of
Wind Direction

July Morning



Percent Probability of
Wind Direction

July Afternoon